



DEPARTMENT OF REGULATORY AND ECONOMIC RESOURCES (RER)
BOARD AND CODE ADMINISTRATION DIVISION

NOTICE OF ACCEPTANCE (NOA)

**MIAMI-DADE COUNTY
PRODUCT CONTROL SECTION**

11805 SW 26 Street, Room 208
Miami, Florida 33175-2474
T (786) 315-2590 F (786) 315-2599

www.miamidade.gov/economy

Greenheck Fan Corporation

P.O. Box 410

Schofield, WI 54476

SCOPE:

This NOA is being issued under the applicable rules and regulations governing the use of construction materials. The documentation submitted has been reviewed and accepted by Miami-Dade County RER - Product Control Section to be used in Miami Dade County and other areas where allowed by the Authority Having Jurisdiction (AHJ).

This NOA shall not be valid after the expiration date stated below. The Miami-Dade County Product Control Section (In Miami Dade County) and/or the AHJ (in areas other than Miami Dade County) reserve the right to have this product or material tested for quality assurance purposes. If this product or material fails to perform in the accepted manner, the manufacturer will incur the expense of such testing and the AHJ may immediately revoke, modify, or suspend the use of such product or material within their jurisdiction. RER reserves the right to revoke this acceptance, if it is determined by Miami-Dade County Product Control Section that this product or material fails to meet the requirements of the applicable building code.

This product is approved as described herein, and has been designed to comply with the Florida Building Code, including the High Velocity Hurricane Zone.

DESCRIPTION: Model ESS-502D Aluminum Louver

APPROVAL DOCUMENT: Drawing No. **ESS-502D**, titled "ESS-502D Louver", sheets 1 through 16 of 16, dated 04/27/2009, prepared by Greenheck Fan Corporation, signed and sealed by Chander P. Nangia, P.E., bearing the Miami-Dade County Product Control revision stamp with the Notice of Acceptance number and expiration date by the Miami-Dade County Product Control Section.

MISSILE IMPACT RATING: Large and Small Missile Impact Resistant

LABELING: Each unit shall bear a permanent label with the manufacturer's name or logo, city, state, model/series, and following statement: "Miami-Dade County Product Control Approved", unless otherwise noted herein.

RENEWAL of this NOA shall be considered after a renewal application has been filed and there has been no change in the applicable building code negatively affecting the performance of this product.

TERMINATION of this NOA will occur after the expiration date or if there has been a revision or change in the materials, use, and/or manufacture of the product or process. Misuse of this NOA as an endorsement of any product, for sales, advertising or any other purposes shall automatically terminate this NOA. Failure to comply with any section of this NOA shall be cause for termination and removal of NOA.

ADVERTISEMENT: The NOA number preceded by the words Miami-Dade County, Florida, and followed by the expiration date may be displayed in advertising literature. If any portion of the NOA is displayed, then it shall be done in its entirety.

INSPECTION: A copy of this entire NOA shall be provided to the user by the manufacturer or its distributors and shall be available for inspection at the job site at the request of the Building Official.

This NOA **revises NOA # 14-0624.16** and consists of this page 1 and evidence page E-1, as well as approval document mentioned above.

The submitted documentation was reviewed by **Carlos M. Utrera, P.E.**



[Signature]
05/23/2016

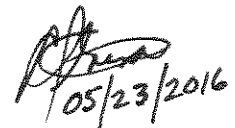
NOA No. 16-0201.08
Expiration Date: August 5, 2019
Approval Date: June 2, 2016
Page 1

NOTICE OF ACCEPTANCE: EVIDENCE SUBMITTED

- A. **DRAWINGS “Submitted under NOA # 09-0519.14”**
1. Drawing No. **ESS-502D**, titled “ESS-502D Louver”, sheets 1 through 16 of 16, dated 04/27/2009, prepared by Greenheck Fan Corporation, signed and sealed by Chander P. Nangia, P.E.
- B. **TESTS “Submitted under NOA # 09-0519.14”**
1. Test report on 1) Uniform Static Air Pressure Test per FBC, TAS 202-94
2) Large Missile Impact Test per FBC, TAS 201-94,
3) Cyclic Wind Pressure Test per FBC, TAS 203-94,
along with marked-up drawings and installation diagram of Model ESS-502D fixed aluminum louvers, prepared by Architectural Testing, Inc., Test Report No. **89882.01-602-18**, dated 04/30/2009, signed and sealed by Joseph A. Reed, P.E.
- C. **CALCULATIONS “Submitted under NOA # 09-0519.14”**
1. Structural load calculations prepared by Greenheck Fan Corporation, dated 04/14/2009, signed and sealed by Chander P. Nangia, P.E.
- D. **QUALITY ASSURANCE**
1. Miami-Dade Department of Regulatory and Economic Resources (RER)
- E. **MATERIAL CERTIFICATIONS**
1. None.
- F. **STATEMENTS**
1. Statement letter of code compliance to the 5th edition (2014) FBC issued by Chander P. Nangia, P.E., dated 01/11/2016, signed and sealed by Chander P. Nangia, P.E.

“Submitted under NOA # 14-0624.14”
 2. Statement letter of code compliance to 2010 FBC issued by Chander P. Nangia, P.E., dated 06/19/2014, signed and sealed by Chander P. Nangia, P.E.

“Submitted under NOA # 09-0519.14”
 3. No financial interest letter issued by Chander P. Nangia, P.E., dated 04/27/2009, signed and sealed by Chander P. Nangia, P.E.



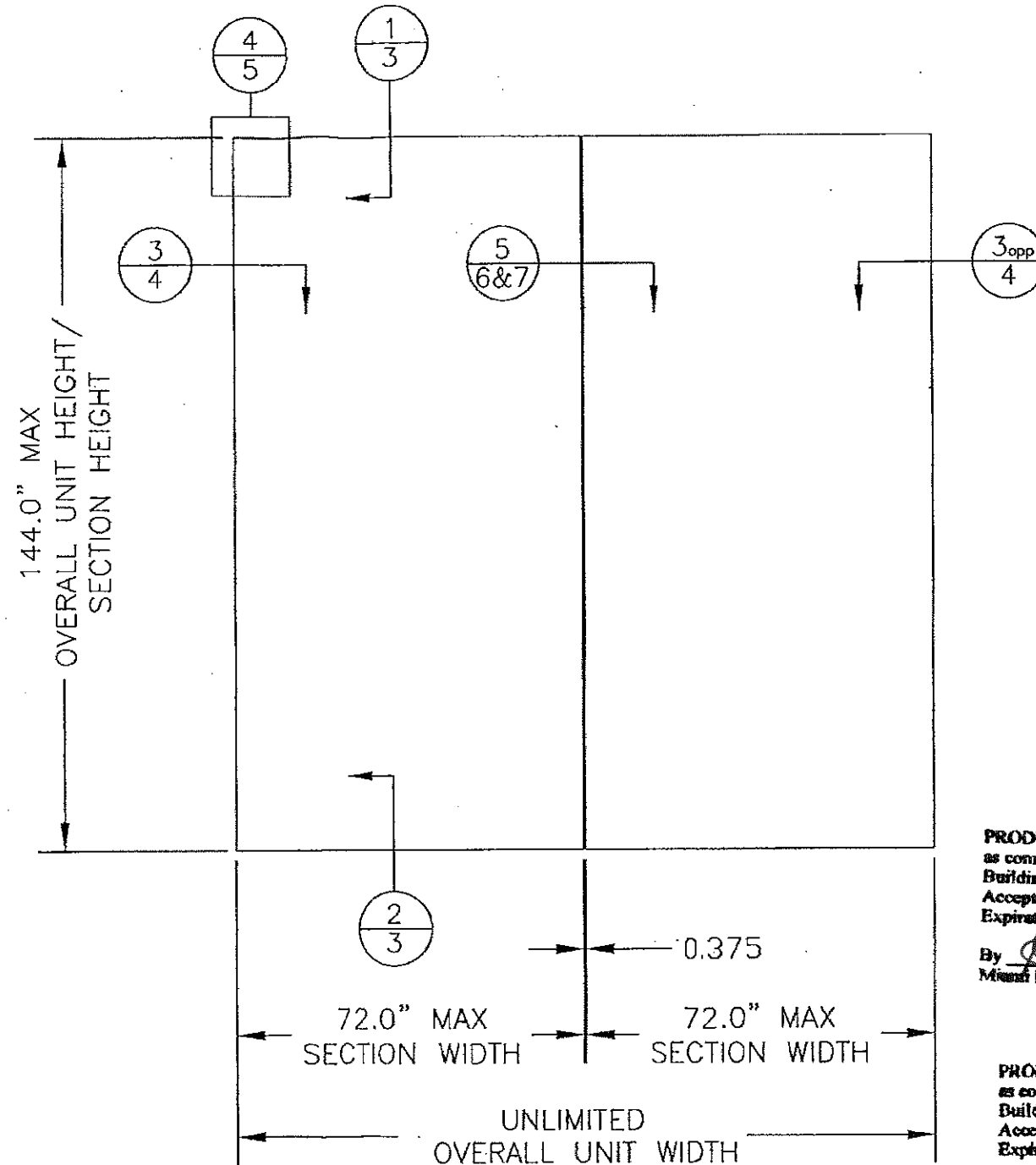
05/23/2016

Carlos M. Utrera, P.E.
Product Control Examiner
NOA No. 16-0201.08
Expiration Date: August 5, 2019
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DETAIL #
PAGE #

DETAIL CALLOUT (TYPICAL)

1 LOUVER ELEV.
SHORT LOUVER LAYOUT



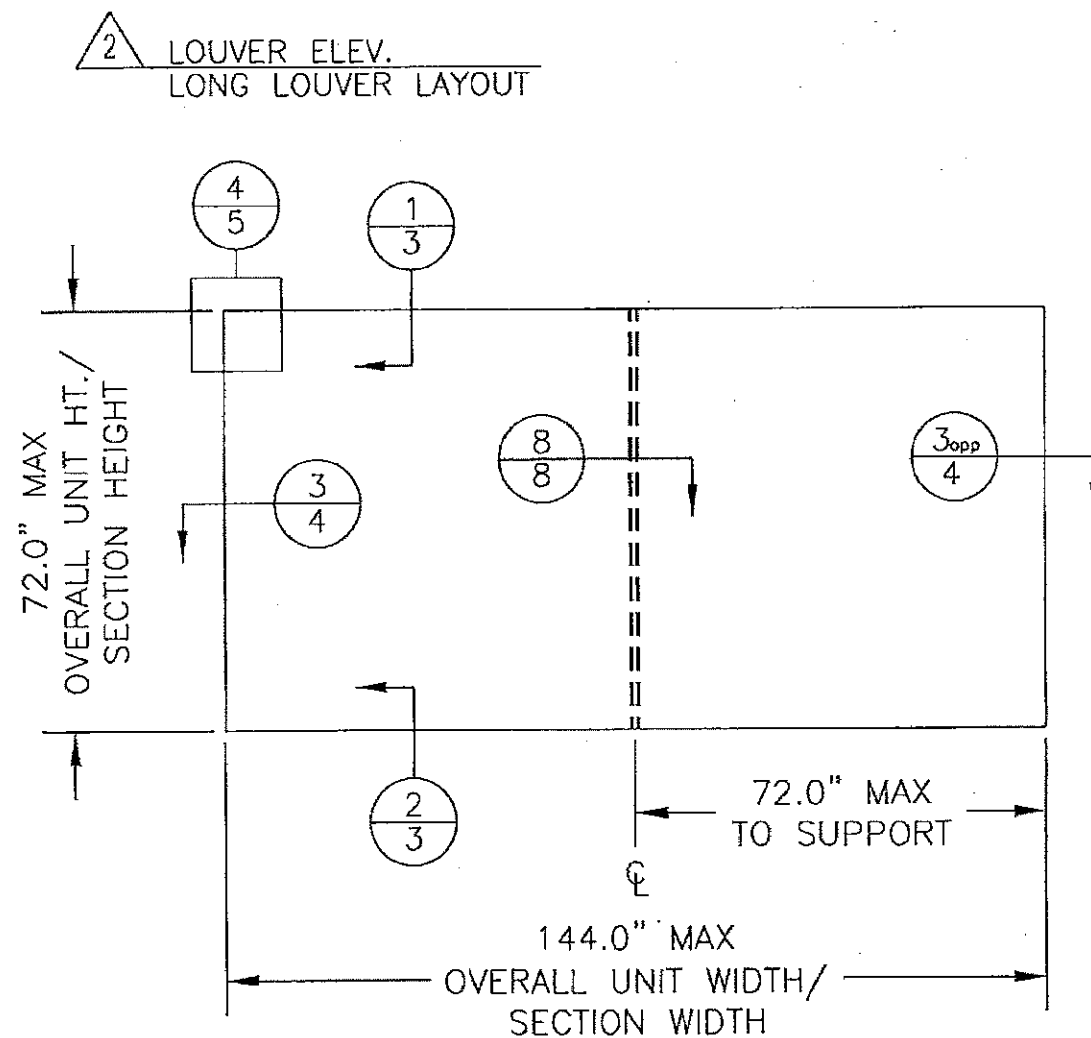
PRODUCT REVISED
as complying with the Florida
Building Code
Acceptance No 16-0201.08
Expiration Date 08/05/2019
By *[Signature]*
Miami Dade Product Control

PRODUCT RENEWED
as complying with the Florida
Building Code
Acceptance No 14-0624.16
Expiration Date 08/05/2019
By *[Signature]*
Miami Dade Product Control

NOTE: MULLION REQUIRED ONLY IF BOTH OF
THE FOLLOWING ARE TRUE: OVERALL UNIT WIDTH
IS >72", AND SECTION HEIGHT IS >72".

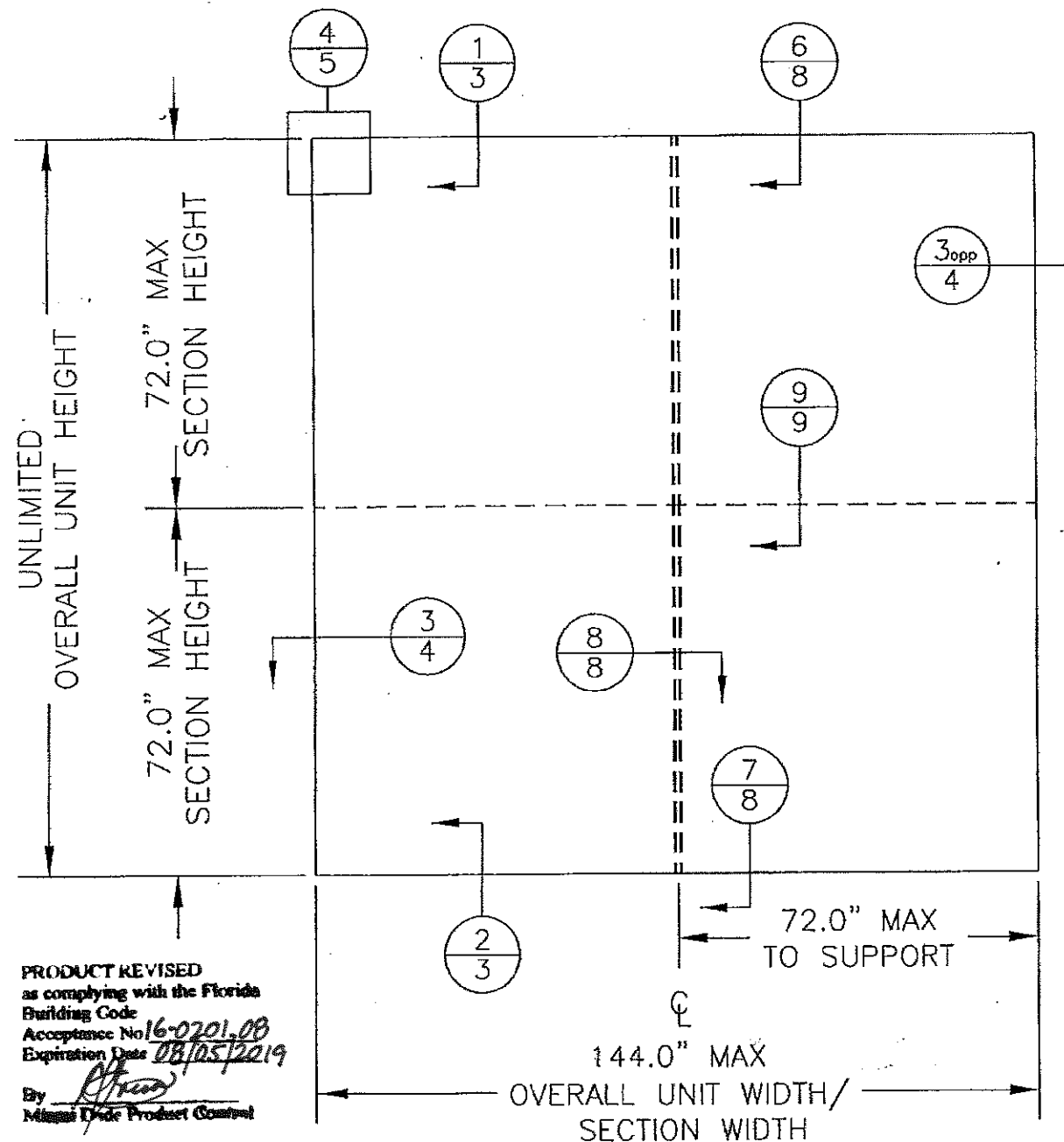
CHANDER P. NANGIA, P.E.
7423 HOLLOW RIDGE DR.
HOUSTON, TX 77095
FLORIDA PE # 21938

DRAWN BY M STEELE	DATE 4/27/09
SCALE 3/8"=1'	
SHEET NO. 1 OF 16	
CAD DRAWING NO. ESS-502D	
TITLE ESS-502D LOUVER SHORT LOUVER LAYOUT ELEVATION CONFIGURATION	
<i>[Signature]</i> MAY 12 2009	
Approved as complying with the Florida Building Code Date 08/05/2009 NOAH 09-0512.14 Miami Dade Product Control Division By <i>[Signature]</i>	



NOTE: BLADE SUPPORT REQUIRED ONLY IF SECTION WIDTH IS >72\".

3 LOUVER ELEV.
LONG LOUVER LAYOUT, SPLICED JAMBS & BLADE SUPPORT



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as complying with the Florida
Building Code
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Expiration Date 08/05/2019
By *[Signature]*
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Building Code
Acceptance No. 14-0629.16
Expiration Date 08/05/2019
By *[Signature]*
Miami Dade Product Control

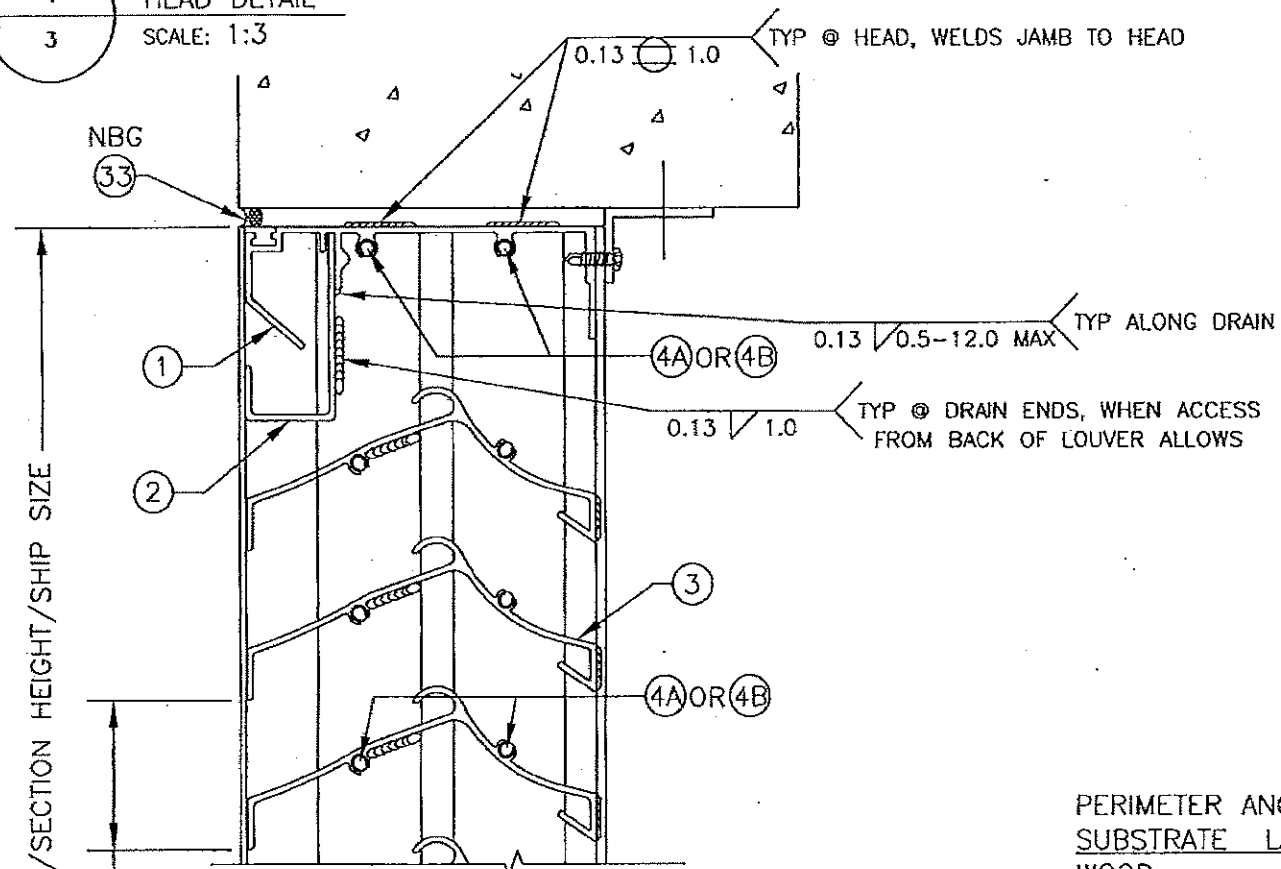
NOTE: BLADE SUPPORT REQUIRED ONLY IF SECTION WIDTH IS >72\".

CHANDER P. NANGIA, P.E.
7423 HOLLOW RIDGE DR.
HOUSTON, TX 77095
FLORIDA PE # 21938

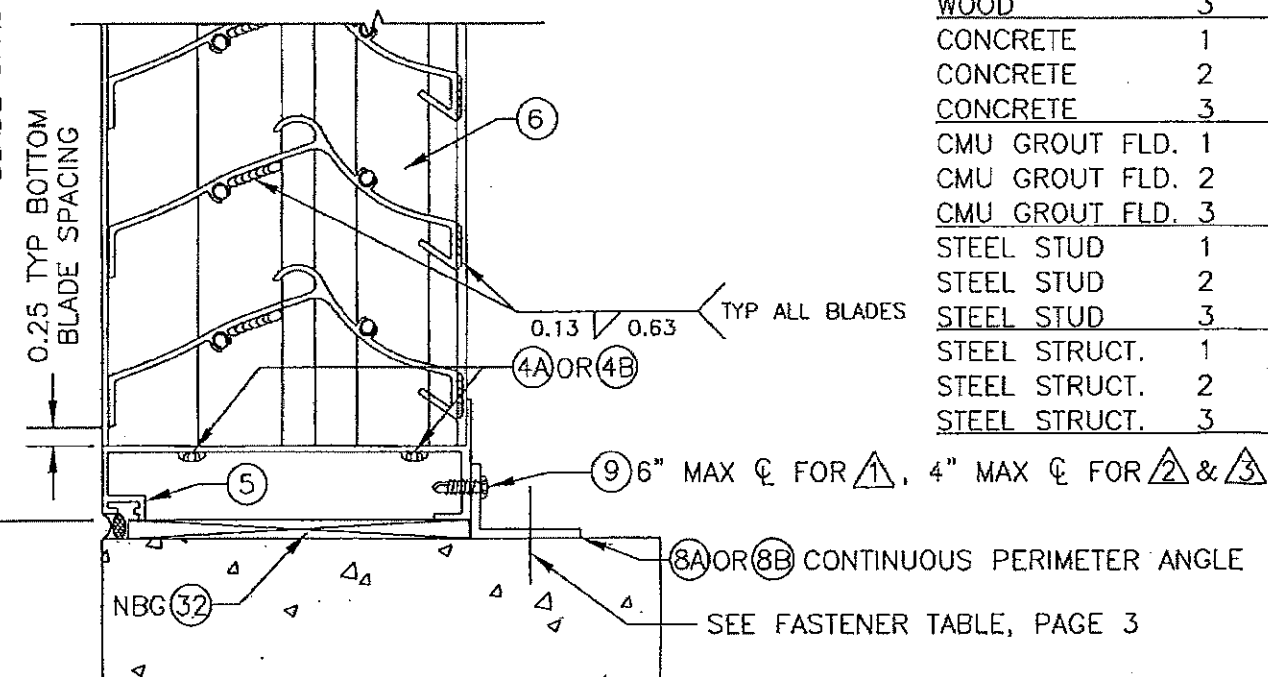
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		P.O. BOX 410 SCHOFIELD, WISCONSIN 54476-0410		
TITLE ESS-502D LOUVER		LONG LOUVER LAYOUT ELEVATION CONFIGURATIONS		
MAY 12 2009				
Approved as complying with the Florida Building Code Date 08/05/2009 NOA# 09-0519.14 Miami Dade Product Control By <i>[Signature]</i>				

1
3

HEAD DETAIL
SCALE: 1:3



OVERALL LOUVER HEIGHT/SECTION HEIGHT/SHIP SIZE
2.0" MAX (TYP)
BLADE SPACING



2
3

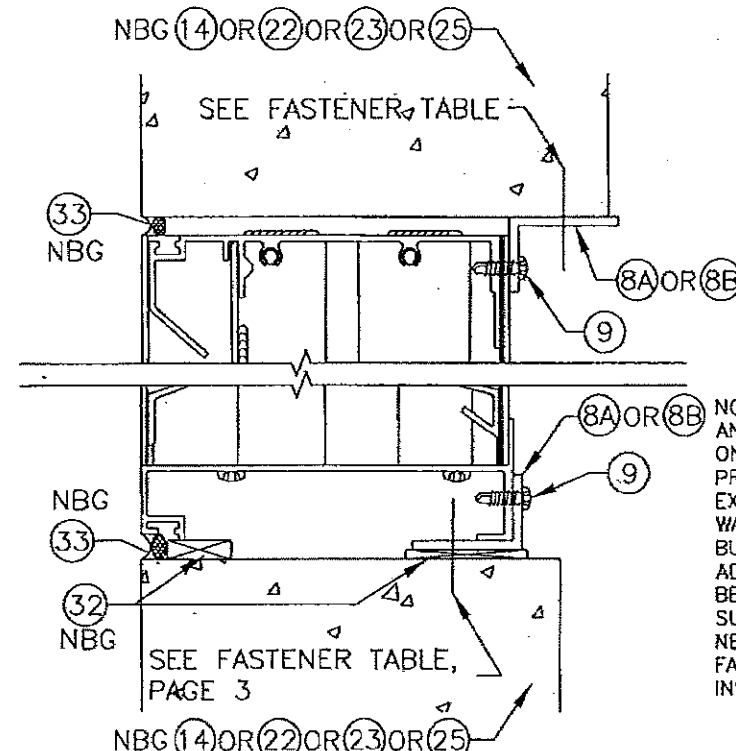
SILL DETAIL
SCALE: 1:3

NBG 14 OR 22 OR 23 OR 25

NOTE FOR CMU: BLOCK IS GROUT FILLED AROUND OPENING. (MIN 2000PSI)

NBG=NOT BY MANUFACTURER

OPTIONAL CONTINUOUS ANGLE CONFIGURATION,
FOR THIS PAGE ONLY



NOTE: CONTINUOUS PERIMETER ANGLE MAY BE POSITIONED ON JAMBS WITH ANGLE LEG PROJECTED TOWARD EXTERIOR OR INTERIOR OF WALL. VALID FOR ALL BUILDING SUBSTRATE TYPES. ADDITIONAL SPACING BETWEEN LOUVER AND SUBSTRATE MAY BE NECESSARY DUE TO FASTENER HEAD-LOUVER INSTALLATION CLEARANCE.

PERIMETER ANGLE SUBSTRATE FASTENER TABLE (FASTENERS NOT BY MANUFACTURER):

SUBSTRATE	LAYOUT "A"	MIN	FASTENER	SPACING & MIN EDGE DISTANCE
WOOD	1	G=0.55	27	9" O.C. MAX, 1.5" MIN WOOD EDGE DISTANCE
WOOD	2	G=0.55	27	4" O.C. MAX, 1.5" MIN WOOD EDGE DISTANCE
WOOD	3	G=0.55	27	4" O.C. MAX, 1.5" MIN WOOD EDGE DISTANCE
CONCRETE	1	2000PSI	21	6" O.C. MAX, 1.5" MIN CONCRETE EDGE DISTANCE
CONCRETE	2	2000PSI	21	3" O.C. MAX, 1.5" MIN CONCRETE EDGE DISTANCE
CONCRETE	3	2000PSI	21	3" O.C. MAX, 1.5" MIN CONCRETE EDGE DISTANCE
CMU GROUT FLD.	1	2000PSI	21	6" O.C. MAX, 1.5" MIN CMU EDGE DISTANCE
CMU GROUT FLD.	2	2000PSI	21	3" O.C. MAX, 1.5" MIN CMU EDGE DISTANCE
CMU GROUT FLD.	3	2000PSI	21	3" O.C. MAX, 1.5" MIN CMU EDGE DISTANCE
STEEL STUD	1	14GA	24	6" O.C. MAX, 0.5" MIN STEEL EDGE DISTANCE
STEEL STUD	2	14GA	24	3" O.C. MAX, 0.5" MIN STEEL EDGE DISTANCE
STEEL STUD	3	14GA	24	3" O.C. MAX, 0.5" MIN STEEL EDGE DISTANCE
STEEL STRUCT.	1	0.375	24	6" O.C. MAX, 0.5" MIN STEEL EDGE DISTANCE
STEEL STRUCT.	2	0.375	24	3" O.C. MAX, 0.5" MIN STEEL EDGE DISTANCE
STEEL STRUCT.	3	0.375	24	3" O.C. MAX, 0.5" MIN STEEL EDGE DISTANCE

PRODUCT RENEWED
as complying with the Florida
Building Code
Acceptance No 14-0624-16
Expiration Date 08/05/2019
By *[Signature]*
Miami Dade Product Control

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as complying with the Florida
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Acceptance No 16-0201-08
Expiration Date 08/05/2019
By *[Signature]*
Miami Dade Product Control

CHANDER P. NANGIA P.E.
7423 HOLLOW RIDGE DR.
HOUSTON, TX 77095
FLORIDA PE # 21938

DRAWN BY
M STEELE

DATE
4/27/09

SCALE
1:2.5

SHEET NO.

3 OF 16

CAD DRAWING NO.

ESS-502D

GREENHECK
P.O. BOX 410 SCHOFIELD,
WISCONSIN 54476-0410

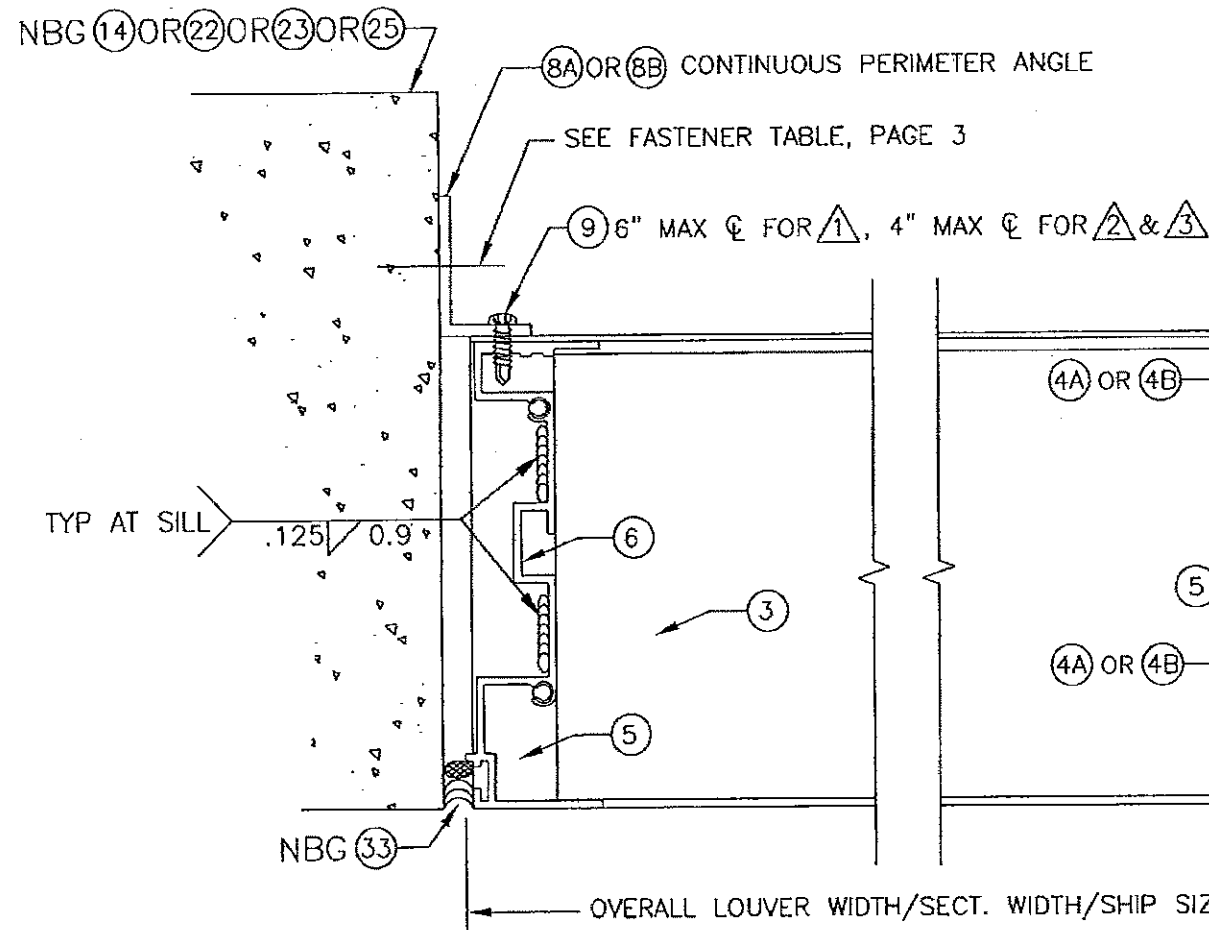
ESS-502D LOUVER

DETAILS - HEAD/SILL

[Signature]

MAY 12 2009

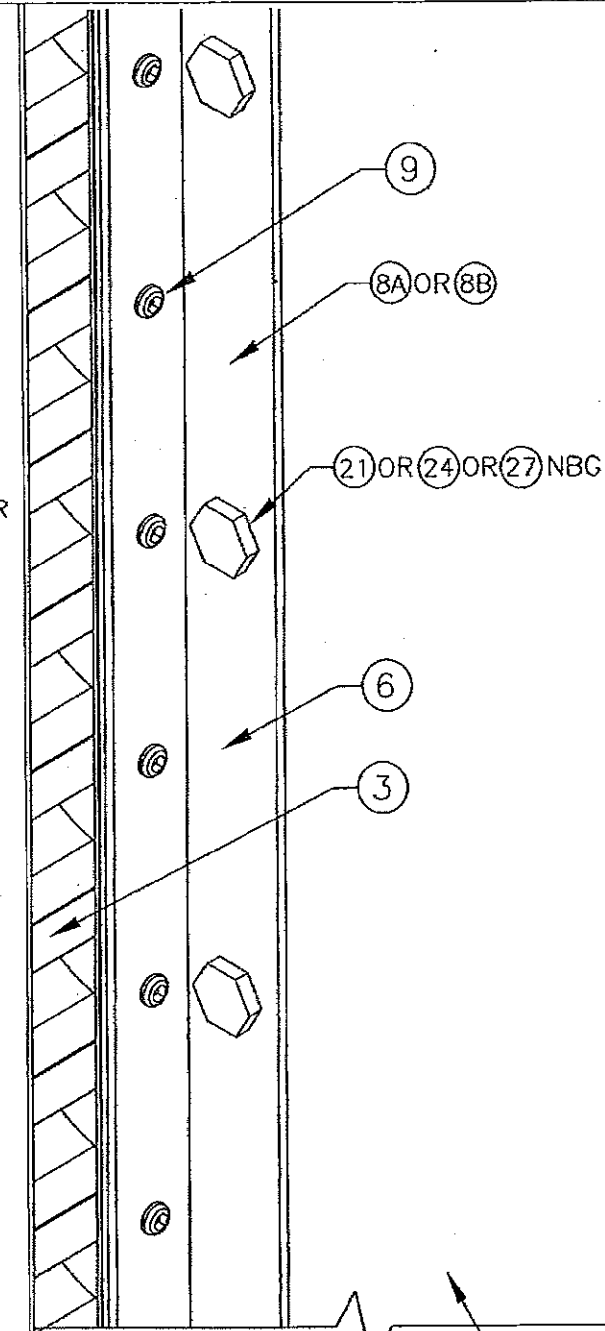
Approved as complying with the
Florida Building Code
Date 08/05/2009
NOAH 07-0512-14
Miami Dade Product Control
By *[Signature]*



NOTE: CONTINUOUS PERIMETER ANGLE MAY BE POSITIONED ON JAMBS WITH ANGLE LEG PROJECTED TOWARD EXTERIOR OR INTERIOR OF WALL. VALID FOR ALL BUILDING SUBSTRATE TYPES. ADDITIONAL SPACING BETWEEN LOUVER AND SUBSTRATE MAY BE NECESSARY DUE TO FASTENER HEAD-LOUVER INSTALLATION CLEARANCE.

SEE FASTENER TABLE, PAGE 3

NOTE FOR CMU: BLOCK IS GROUT FILLED AROUND OPENING. (MIN 2000PSI)



NBG (14) OR (22) OR (23) OR (25)

CHANDER P. NANGIA, P.E.
7423 HOLLOW RIDGE DR.
HOUSTON, TX 77095
FLORIDA PE # 21938

3 ISO JAMB DETAIL
4 SCALE: 1:2

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Expiration Date 08/05/2019
By [Signature]
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Building Code
Acceptance No 14-0624-16
Expiration Date 08/05/2019
By [Signature]
Miami Dade Product Control

DRAWN BY M STEELE	DATE 4/27/09	SCALE 1:2	SHEET NO. 4 OF 16	CAD DRAWING NO. ESS-502D
		TITLE ESS-502D LOUVER DETAILS - JAMBS		
MAY 12 2009 Approved as complying with the Florida Building Code Date 08/05/2009 NOA# 09-0579-14 Miami Dade Product Control Division By [Signature]				

3 JAMB DETAIL
4 SCALE: 1:2
SEE "3 ISO" FOR ISOMETRIC DETAIL

3opp JAMB DETAIL
4 SCALE: 1:2

NBG=NOT BY MANUFACTURER

OVERALL LOUVER WIDTH/SECT. WIDTH/SHIP SIZE

TYP AT SILL .125 0.9

SEE FASTENER TABLE
PAGE 3

TRIANGLE 1 = MULLION UNIT
TRIANGLE 2 = LONG BLADE UNIT
TRIANGLE 3 = SPLICED UNIT

TYPICAL ALL CORNERS


(VIEW FROM INTERIOR)

6.0 C/L SPACING FOR TRIANGLE 1
4.0 C/L SPACING FOR TRIANGLES 2 & 3

(BUILDING CONDITION NOT SHOWN)

CONTINUOUS ANGLE FASTENER DISTANCES

Diagram illustrating the building condition attachment leg. The diagram shows a cross-section of a leg with a vertical section labeled "LOUVER ATTACHMENT LEG" and a horizontal section labeled "BUILDING CONDITION ATTACHMENT LEG". The vertical section has a height dimension of 0.81. The horizontal section has a width dimension of 1.0 MIN. A callout (9) points to the corner joint, and a callout (8A) OR (8B) points to the horizontal leg. A reference to "SEE FASTENER TABLE, PAGE 3" is also present.



CONTINUOUS ANGLE, INTERIOR VIEW
SCALE: 1:2

— CONTINUOUS PERIMETER ANGLE

VARIES, BUT NEVER MORE
THAN MIN FASTENER SPACING

- CONTINUOUS PERIMETER ANGLE

VARIES, BUT NEVER MORE
THAN MIN FASTENER SPACING

SEE FASTENER TABLE,
PAGE 3

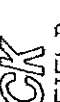
SEE FASTENER TABLE
PAGE 3


PRODUCT REVISED
as complying with the Florida
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Acceptance No 16-0204.08
Expiration Date 08/05/2019
By [Signature]
Miami Dade Product Control



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Acceptance No. 14-0624, 16
Expiration Date 03/05/2019
By [Signature]
Miami Dade Product Control

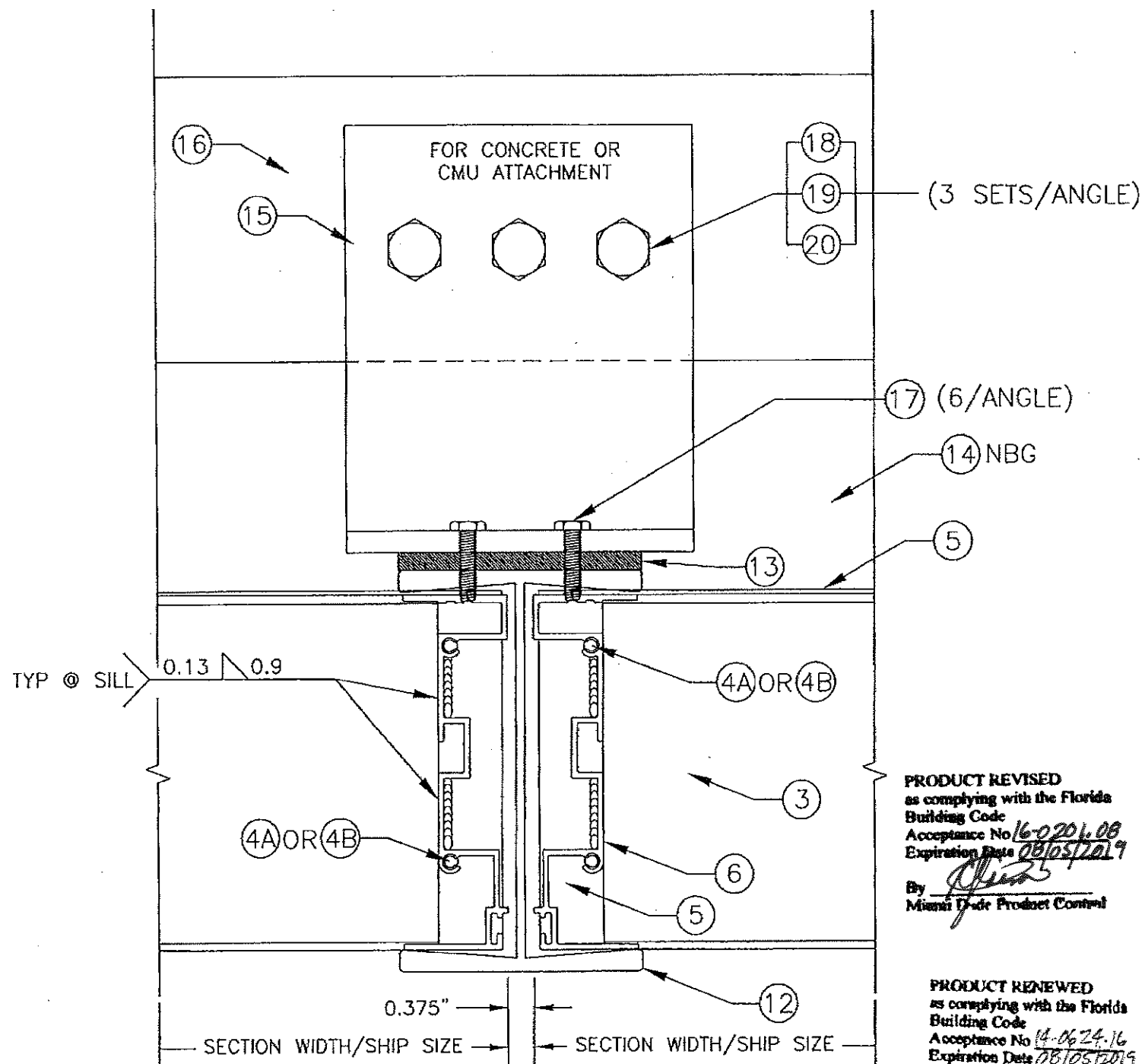
CHANDER P. NANGIA^{PE}
7423 HOLLOW RIDGE DR.
HOUSTON, TX 77095
FLORIDA PE # 21938

DRAWN BY M STEELE	DATE 4/27/09
SCALE 1:2	
SHEET NO.	5 OF 16
CAD DRAWING NO.	ESS-501D

	GREENHECK P.O. BOX 410 SCHOFIELD, WISCONSIN 54476-0410	TITLE ESS-502D LOUVER	DETAILS - CONTINUOUS ANGLE
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MAY 12 2009

Approved as complying with the
Florida Building Code
Date 08/05/2009
NOAA 09-0519-14
Miami Dade Product Control
Division 
By 

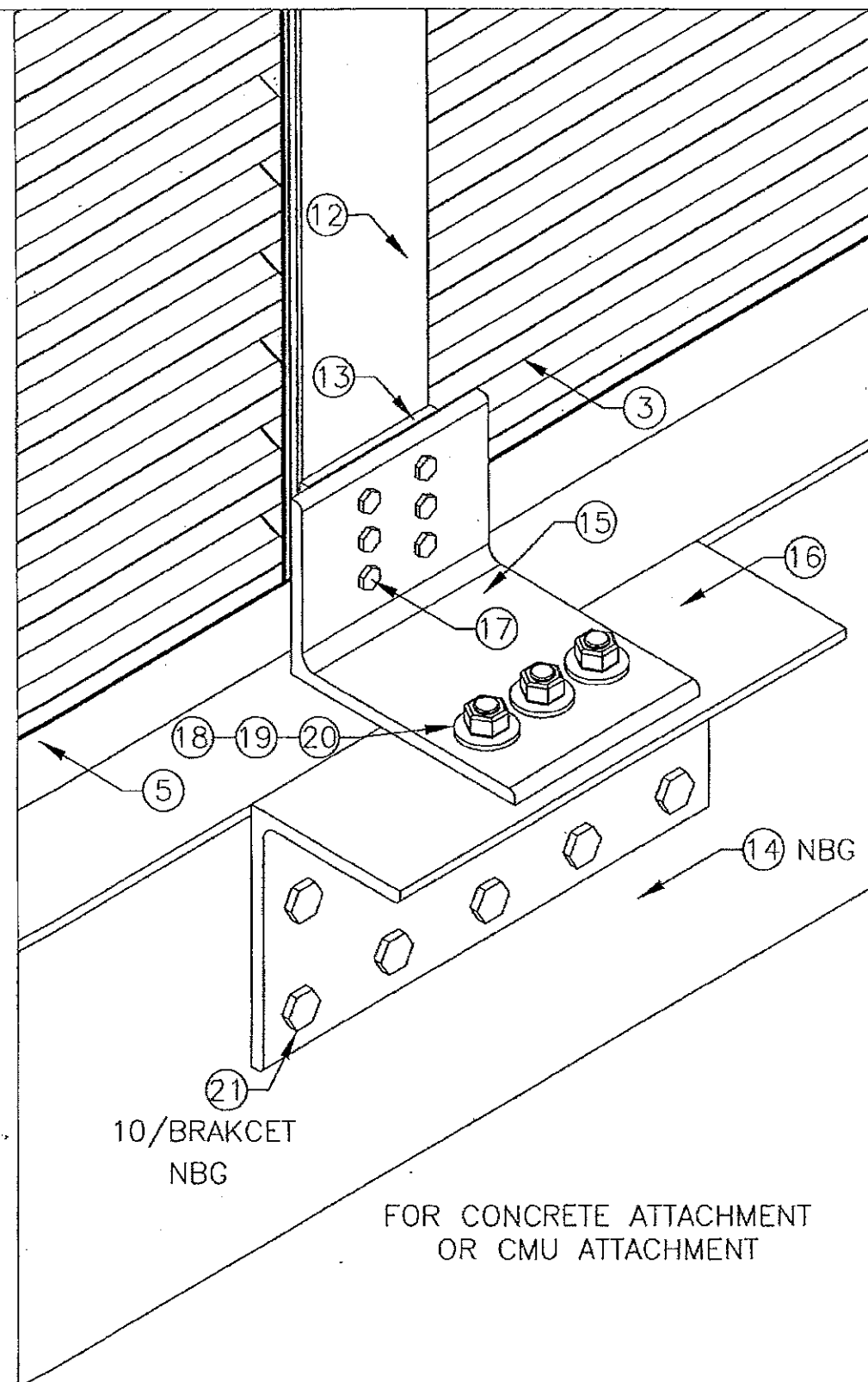


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Building Code
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Expiration Date 08/05/2019
By *[Signature]*
Miami Dade Product Control

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Building Code
Acceptance No 14-0624-16
Expiration Date 08/05/2019
By *[Signature]*
Miami Dade Product Control

NBG=NOT BY MANUFACTURER

NOTE: CONTINUOUS PERIMETER
ANGLE NOT SHOWN ON THIS PAGE.



5A ISO
6
ISOMETRIC (MULLION DETAIL)
(TYPICAL @HEAD AND SILL)
SCALE: 1:3

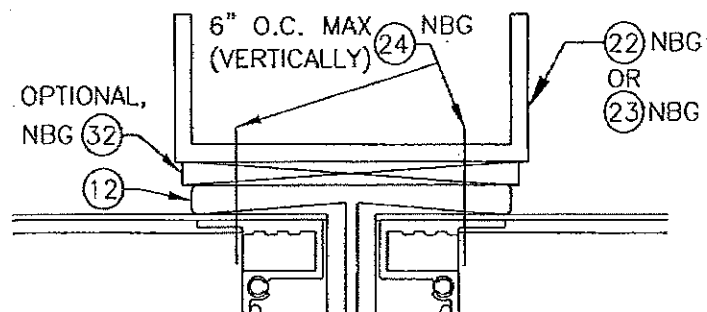
CHANDER P. NANGIA, P.E.
7423 HOLLOW RIDGE DR.
HOUSTON, TX 77095
FLORIDA PE # 21938

DRAWN BY M STEELE	DATE 4/27/09	SCALE VARIES	SHEET NO. 6 OF 16	CAD DRAWING NO. ESS-502D
GREENHECK P.O. BOX 410 SCHOFIELD, WISCONSIN 54476-0410		TITLE ESS-502D LOUVER		
		DETAILS - CMU & CONCRETE MULLION SUPPORT		
		 MAY 12 2009		
Approved as complying with the Florida Building Code Date 08/05/2009 NOAH 09-0519-14 Miami Dade Product Control Division By <i>[Signature]</i>				

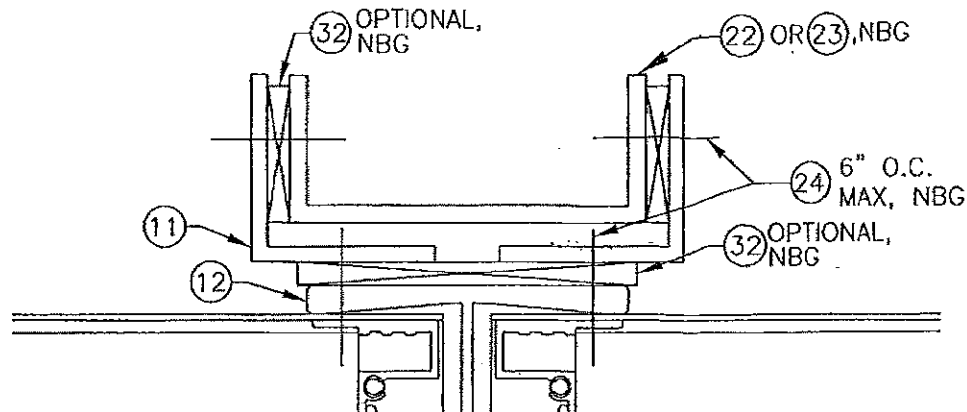
5 B
7

STEEL MULLION ATTACHMENT 1
SCALE: 1:2

FOR STRUCTURAL STEEL OR STEEL STUD ATTACHMENT
OPTION ONE



FOR STRUCTURAL STEEL OR STEEL STUD ATTACHMENT
OPTION TWO



5 C
7

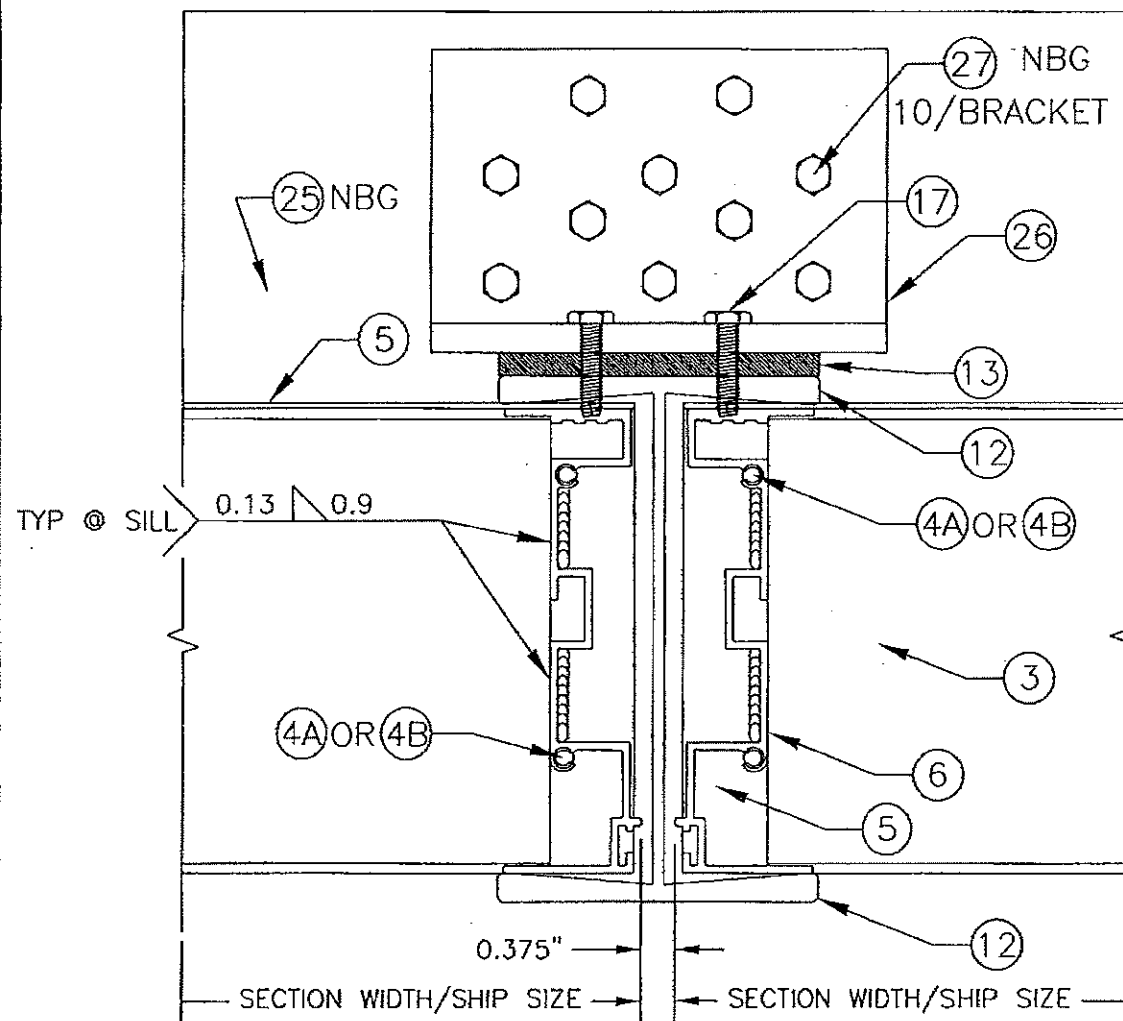
STEEL MULLION ATTACHMENT 2
SCALE: 1:2

NOTE: STRUCTURAL STEEL AND STEEL STUD MULLION SUPPORT TYPES (NOT BY GREENHECK) MUST BE CAPABLE OF WITHSTANDING ALL LOADS TRANSFERRED BY THE LOUVER SECTIONS AT THE TOP AND BOTTOM OF THE VERTICAL MULLION CONDITION(S). THE FORMULA TO DETERMINE THE TRANSFERRED POINT LOAD IN POUNDS IS (SECTION WIDTH FEET X SECTION HEIGHT FEET X 110 PSF)/2.

5 D
7

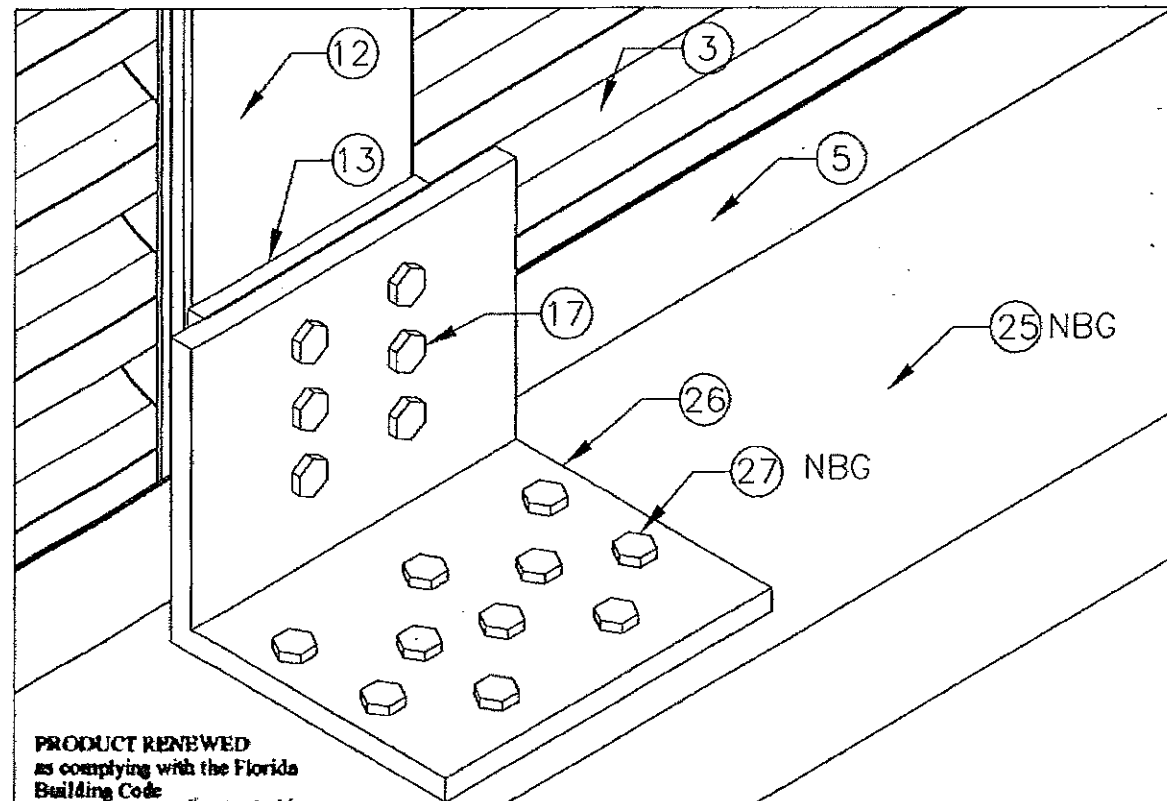
WOOD MULLION ATTACHMENT
SCALE: 1:2

SEE "5 D ISO" FOR ISOMETRIC DETAIL



NOTE: CONTINUOUS PERIMETER
ANGLE NOT SHOWN ON THIS PAGE.

NBG=NOT BY MANUFACTURER



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Expiration Date 08/05/2019
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Expiration Date 08/05/2019
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5 D ISO
7

WOOD MULLION ATTACHMENT
SCALE: 1:2

CHANDER P. NANGIA, P.E.
7423 HOLLOW RIDGE DR.
HOUSTON, TX 77095
FLORIDA PE # 21938

DRAWN BY DATE
M STEELE 4/27/09

SCALE
1:2

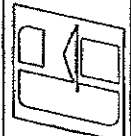
SHEET NO.

7 OF 16

CAD DRAWING NO.

ESS-502D

GREENHECK
P.O. BOX 410 SCHOFIELD,
WISCONSIN 54476-0410



ESS-502D LOUVER
DETAILS - STEEL STUD,
STRUCTURAL STEEL, &
WOOD MULLION SUPPORT

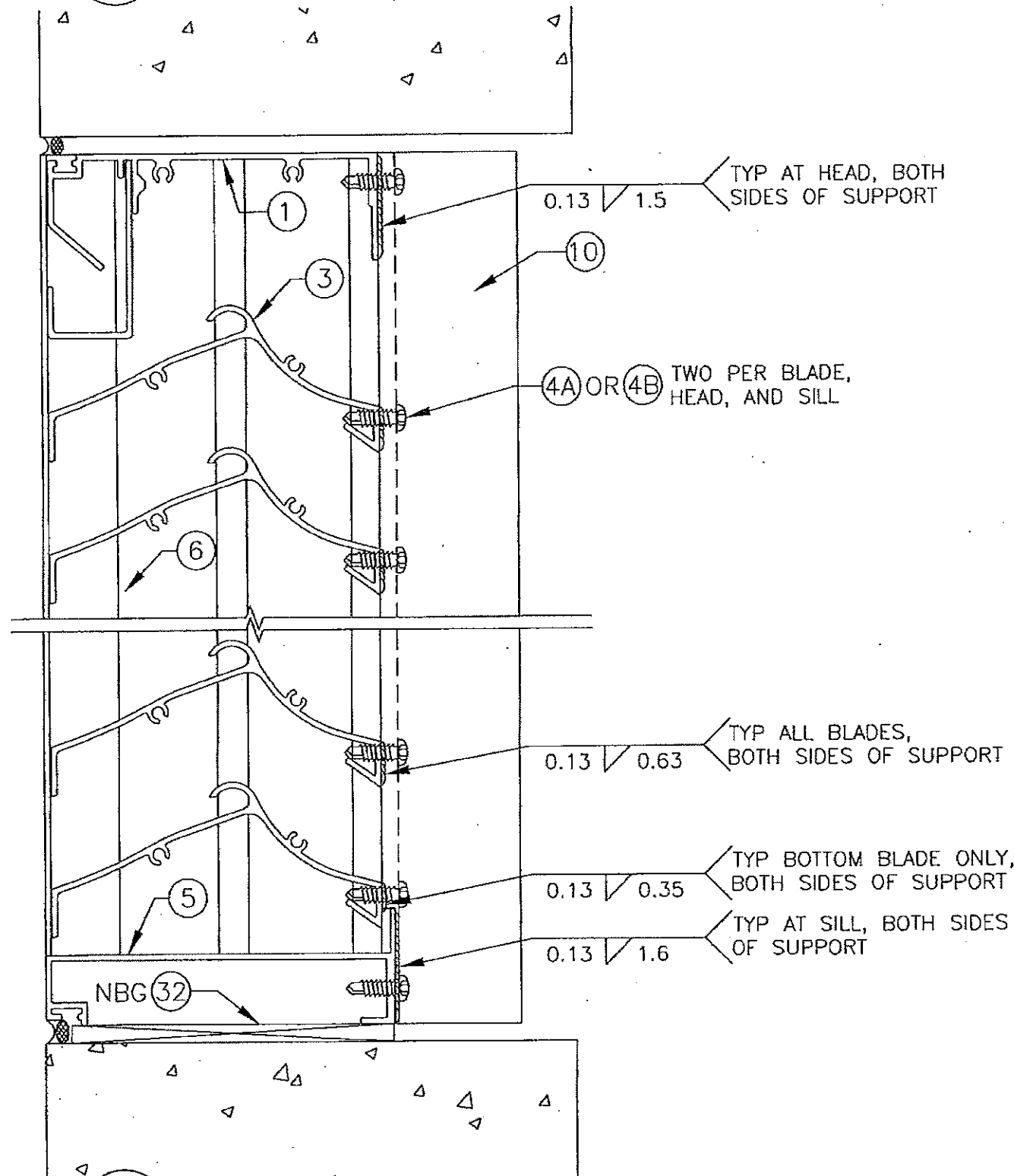
[Signature]

MAY 12 2009

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Florida Building Code
Date 08/05/2009
NOA# 09-0519-14
Miami Dade Product Control
Division
By *[Signature]*

6
8

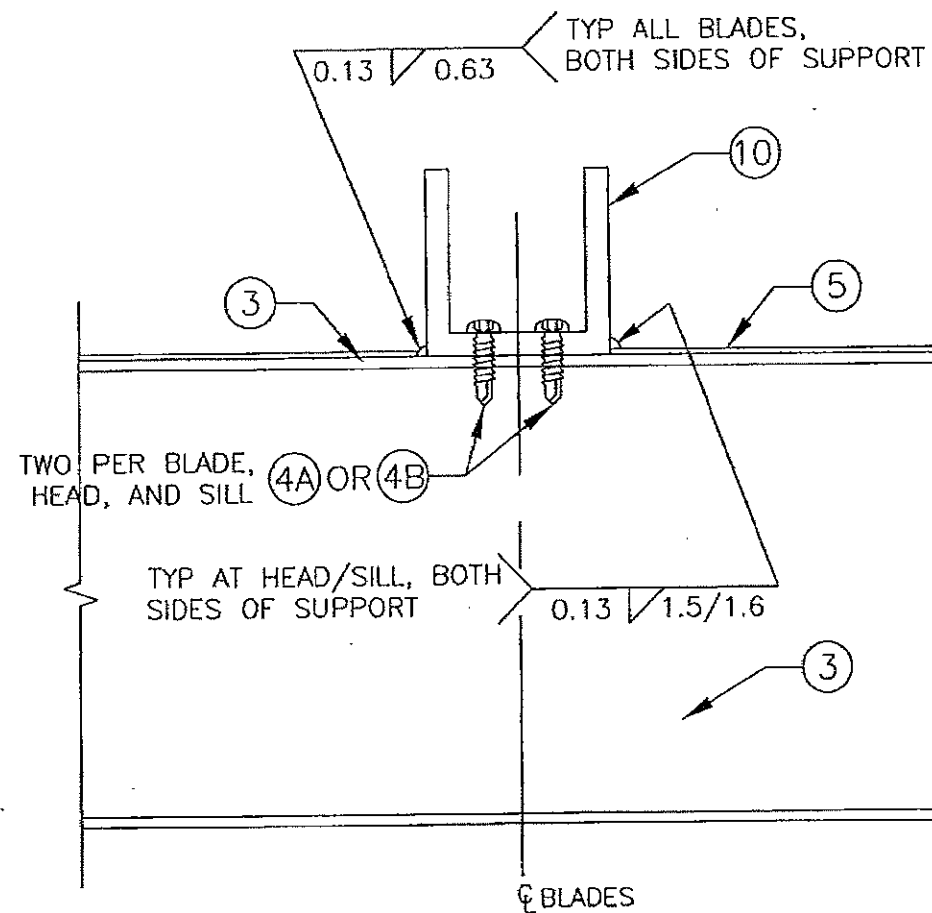
BLADE SUPPORT HEAD DETAIL (SECTIONS >72" WIDE) SIDE VIEW
SCALE: 1:2



7
8

BLADE SUPPORT SILL DETAIL (SECTIONS >72" WIDE) SIDE VIEW
SCALE: 1:2

NBG=NOT BY MANUFACTURER



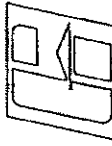

8
8

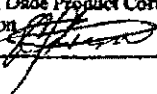
BLADE SUPPORT DETAIL (SECTIONS >72" WIDE) TOP VIEW
SCALE: 1:2

PRODUCT REVISED
as complying with the Florida
Building Code
Acceptance No 16-0201.08
Expiration Date 08/05/2019
By [Signature]
Miami Dade Product Control

PRODUCT RENEWED
as complying with the Florida
Building Code
Acceptance No 14-0624.16
Expiration Date 05/05/2019
By [Signature]
Miami Dade Product Control

CHANDER P. NANGIA, P.E.
7423 HOLLOW RIDGE DR.
HOUSTON, TX 77095
FLORIDA PE # 21938

	GREENHECK P.O. BOX 410 SCHOFIELD, WISCONSIN 54476-0410	DRAWN BY M STEELE	DATE 4/27/09
		SCALE 1:2	
		SHEET NO. 8 OF 16	
TITLE ESS-502D LOUVER		CAD DRAWING NO. ESS-502D	
 MAY 12 2009		DETAILS - BLADE SUPPORT	

Approved as complying with the
Florida Building Code
Date 08/05/2009
NOA# 09-10519.14
Miami Dade Product Control
Division
By 

[Signature]
MAY 12 2009

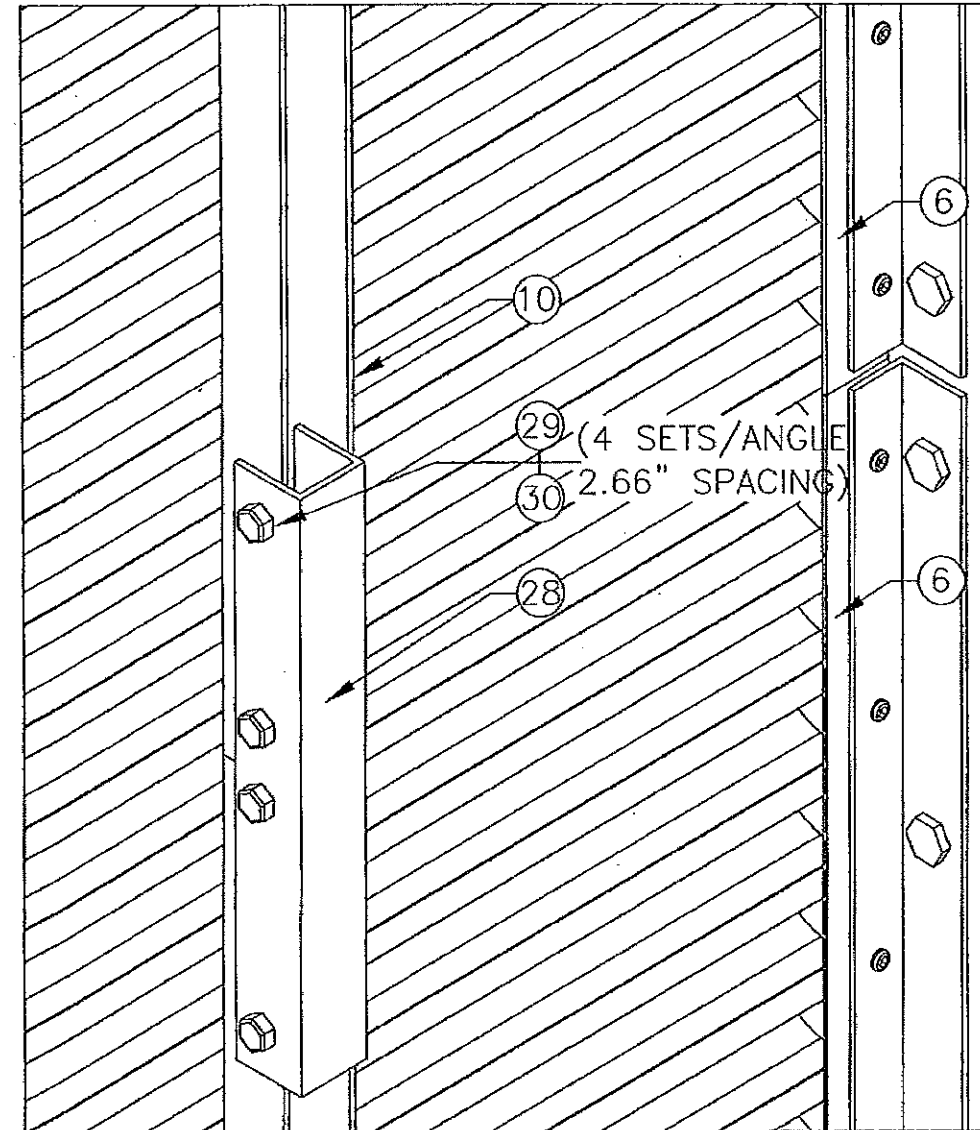
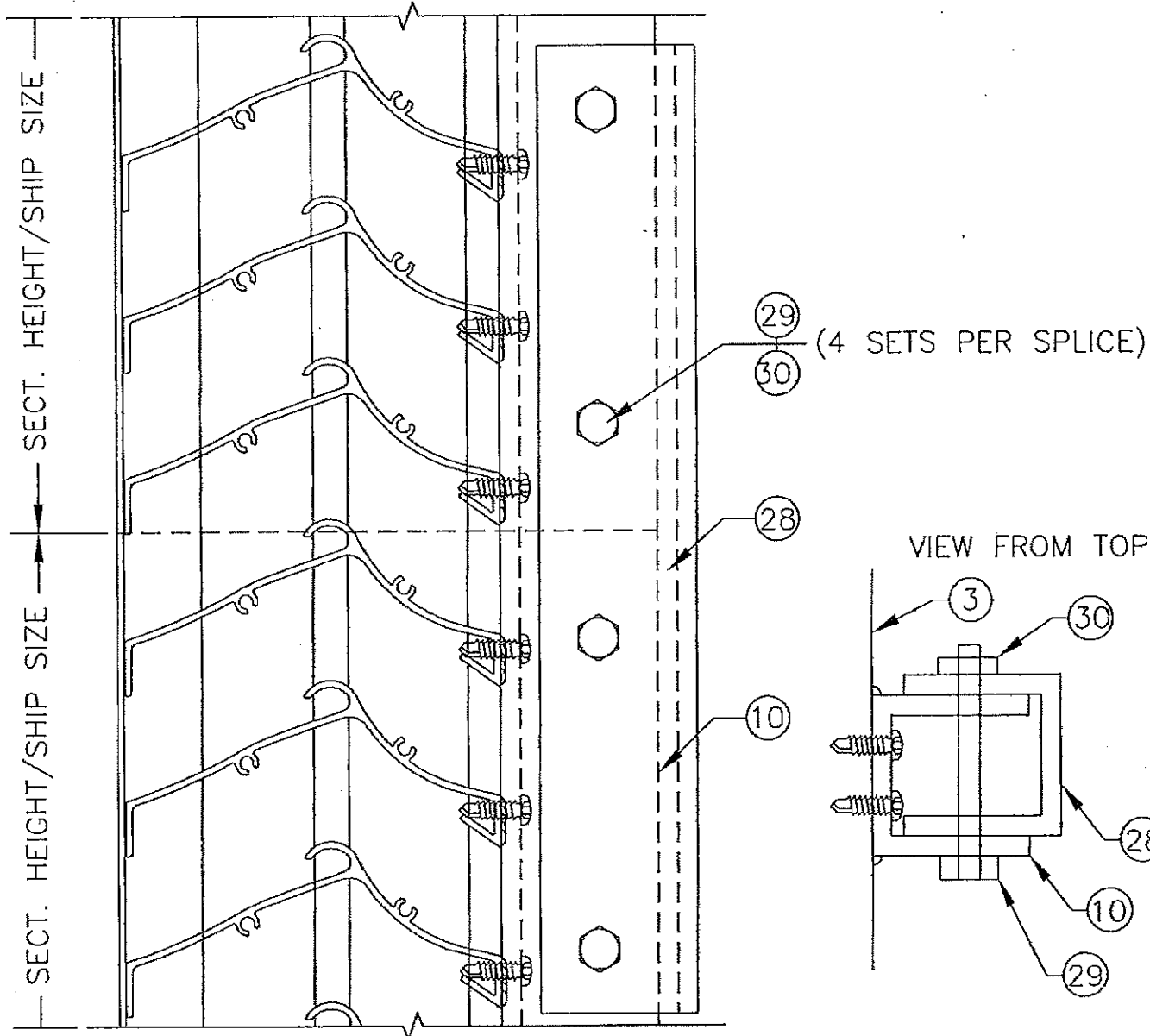
Approved as complying with the
Florida Building Code
Date 08/05/2009
NOA# 09-10319.14
Miami Dade Product Control
Division [Signature]

9
9

VERTICAL SPLICE/STACK DETAIL

SCALE: 1:2

SEE "9 ISO" FOR ISOMETRIC DETAIL



9 ISO
9

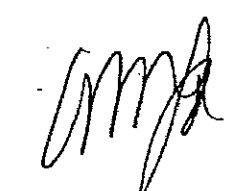
ISOMETRIC (SPLICE/STACK DETAIL)

SCALE: 1:3

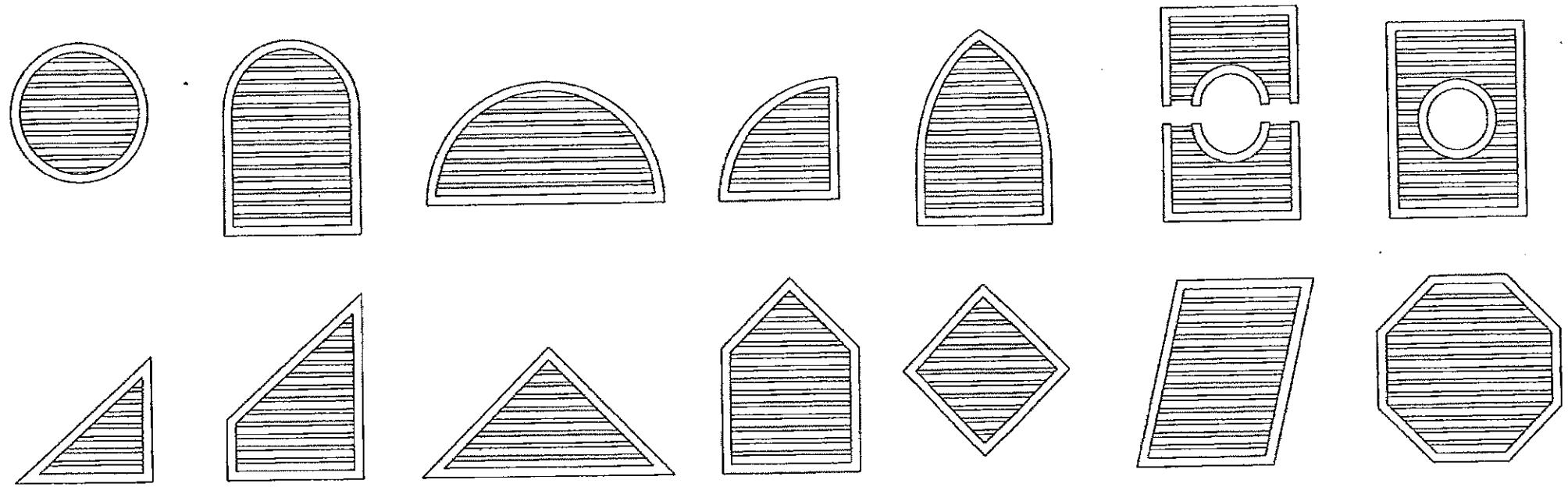
PRODUCT REVISED
as complying with the Florida
Building Code
Acceptance No 16-0201-08
Expiration Date 08/05/2019
By *[Signature]*
Miami Dade Product Control

PRODUCT RENEWED
as complying with the Florida
Building Code
Acceptance No 14-0624-16
Expiration Date 08/05/2019
By *[Signature]*
Miami Dade Product Control

CHANDER P. NANGIA
7423 HOLLOW RIDGE DR.
HOUSTON, TX 77095
FLORIDA PE # 21938

DRAWN BY M STEELE	DATE 4/27/09	SCALE VARIES	SHEET NO. 9 OF 16	CAD DRAWING NO. ESS-502D
GREENHECK P.O. BOX 410 SCHOFIELD, WISCONSIN 54476-0410		TITLE ESS-502D LOUVER		
DETAILS - SPLICED BLADE SUPPORT				
 MAY 13 2009				
Approved as complying with the Florida Building Code Date 08/05/2009 NOAH# 14-0519-14 Miami Dade Product Control Division By <i>[Signature]</i>				

BELOW ARE THE SHAPE UNITS THAT THE NOA WILL ALLOW



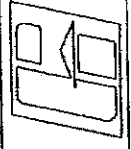
NOTES:

- 1. OTHER SHAPES MAY APPLY PROVIDING THEY ARE SIMILAR TO THOSE SHOWN AND HAVE CONSTRUCTION AS DESCRIBED IN THIS PACKET.
- 2. ALL SHAPE LOUVERS ARE TO HAVE THE SAME WIDTH, HEIGHT, AND PRESSURE RESTRICTIONS AS RECTANGULAR LOUVERS, AND MAY BE SPLICED/STACKED VERTICALLY AND HORIZONTALLY (MULLED UNITS) IN THE SAME MANNER AS RECTANGULAR LOUVERS.
- 3. IF THE SHAPE LOUVER SECTION WIDTH EXCEEDS 72", A BLADE SUPPORT IS REQUIRED.
- 4. A MULLION REQUIRED FOR SHAPE LOUVERS ONLY IF BOTH OF THE FOLLOWING ARE TRUE: OVERALL UNIT WIDTH IS >72", AND SECTION HEIGHT IS >72".
- 5. FOLLOW THE SAME GUIDELINES AS NON-SHPAED UNITS FOR FASTENING OF SHAPE UNITS TO THE BUILDING CONDITION.

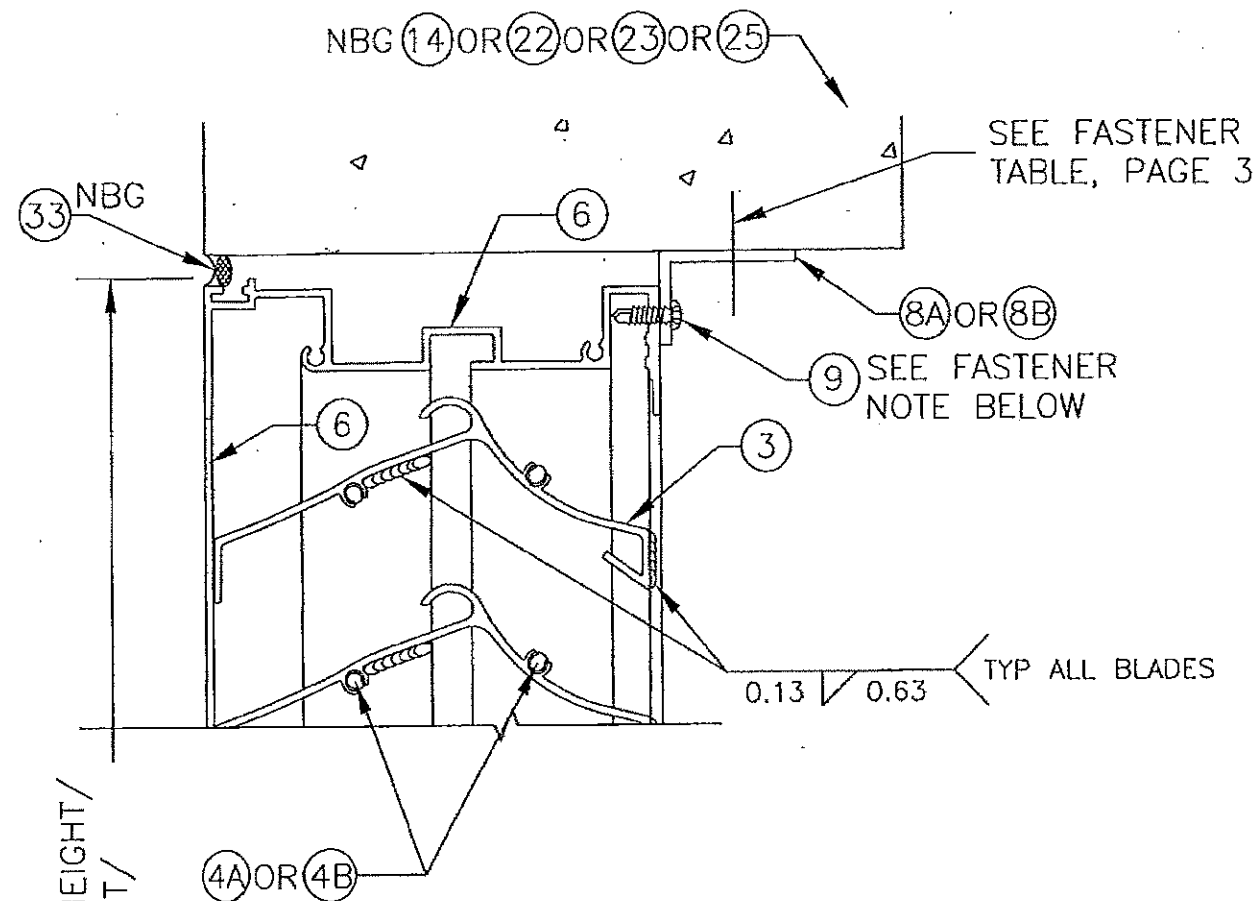
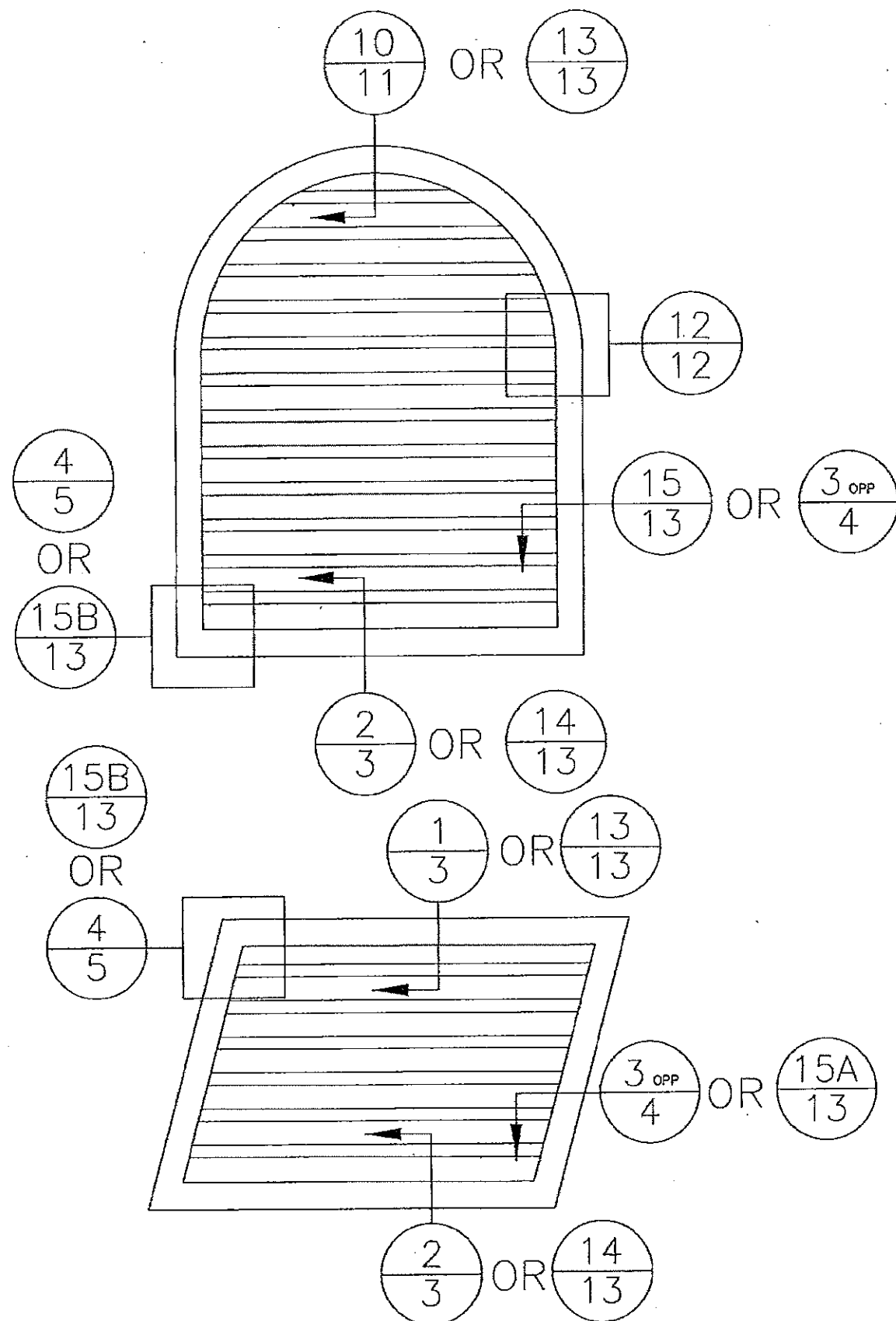
PRODUCT REVISED
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Miami Dade Product Control

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CHANDER P. NANGIA ^{PE.}
7423 HOLLOW RIDGE DR.
HOUSTON, TX 77095
FLORIDA PE # 21938

 GREENHECK P.O. BOX 410 SCHOFIELD, WISCONSIN 54476-0410	DRAWN BY M STEELE	DATE 4/27/09
	SCALE 0.5":1'	SHEET NO. 10 OF 16
TITLE ESS-502D LOUVER		CAD DRAWING NO. ESS-502D
SHAPE STYLES, ELEVATION CONFIGURATIONS		
<div><i>[Signature]</i> MAY 12 2009</div> <div>Approved as complying with the Florida Building Code Date 08/05/2009 NOA# 08-0519-14 Miami Dade Product Control Division <i>[Signature]</i> By <i>[Signature]</i></div>		

4 TYPICAL SHAPE LOUVER CALLOUTS



OVERALL LOUVER HEIGHT/
SECTION HEIGHT/
SHIP SIZE

FASTENER NOTES FOR (9):

6" MAX ϕ FOR (1), 4" MAX ϕ FOR (2) & (3)

10 SHAPES HEAD DETAIL
11 SCALE: 1:2

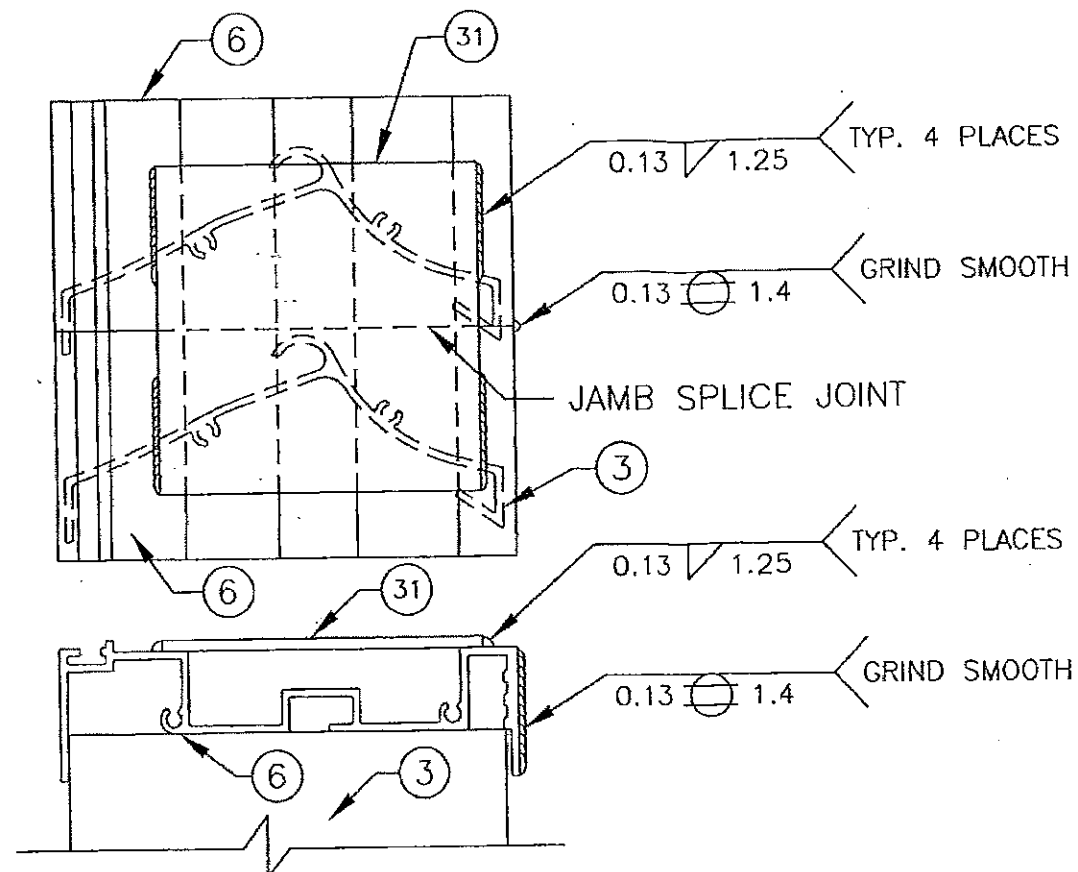
PRODUCT REVISED
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By *[Signature]*
Miami Dade Product Control

CHANDER P. NANGIA, P.E.
7423 HOLLOW RIDGE DR.
HOUSTON, TX 77095
FLORIDA PE # 21938

NBG=NOT BY MANUFACTURER

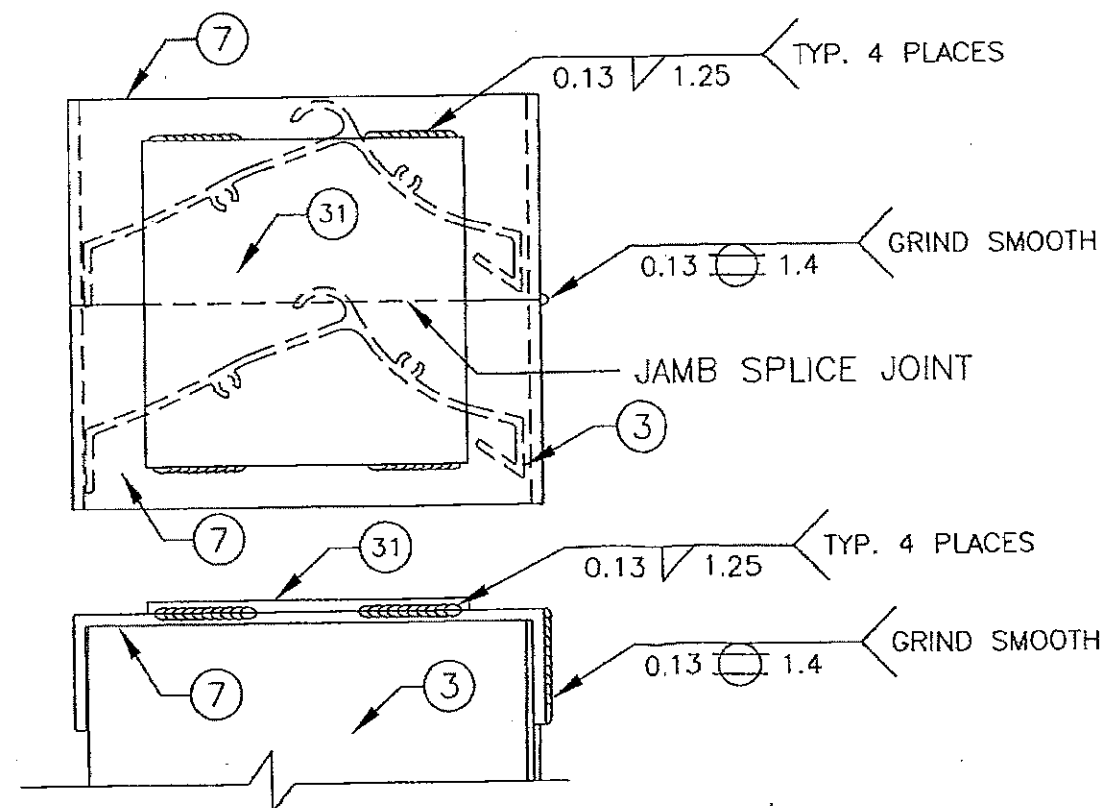
DRAWN BY M STEELE	DATE 4/27/09	SCALE VARIES	SHEET NO. 11 OF 16	CAD DRAWING NO. ESS-502D
GREENHECK P.O. BOX 410 SCHOFIELD, WISCONSIN 54476-0410		TITLE ESS-502D LOUVER SHAPE ELEVATIONS, DETAILS - SHAPE		
 MAY 12 2009 Approved as complying with the Florida Building Code Date 08/05/2009 NOA# 14-0519-14 Miami Dade Product Control Division By <i>[Signature]</i>				

12 A JAMB SPLICE DETAIL
SCALE: 1:2



THIS IS ONLY ON SHAPE UNITS WHEN A CURVED EXTRUDED JAMB MEETS A STRAIGHT JAMB (THIS IS NOT FOR A "SPliced" UNIT WHERE ONE LOUVER SIT ON TOP OF ANOTHER).

12 B CHANNEL JAMB SPLICE DETAIL
SCALE: 1:2




THIS IS ONLY ON SHAPE UNITS WHEN A CURVED C-CHANNEL JAMB MEETS A STRAIGHT JAMB (THIS IS NOT FOR A "SPliced" UNIT WHERE ONE LOUVER SIT ON TOP OF ANOTHER).

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Miami Dade Product Control

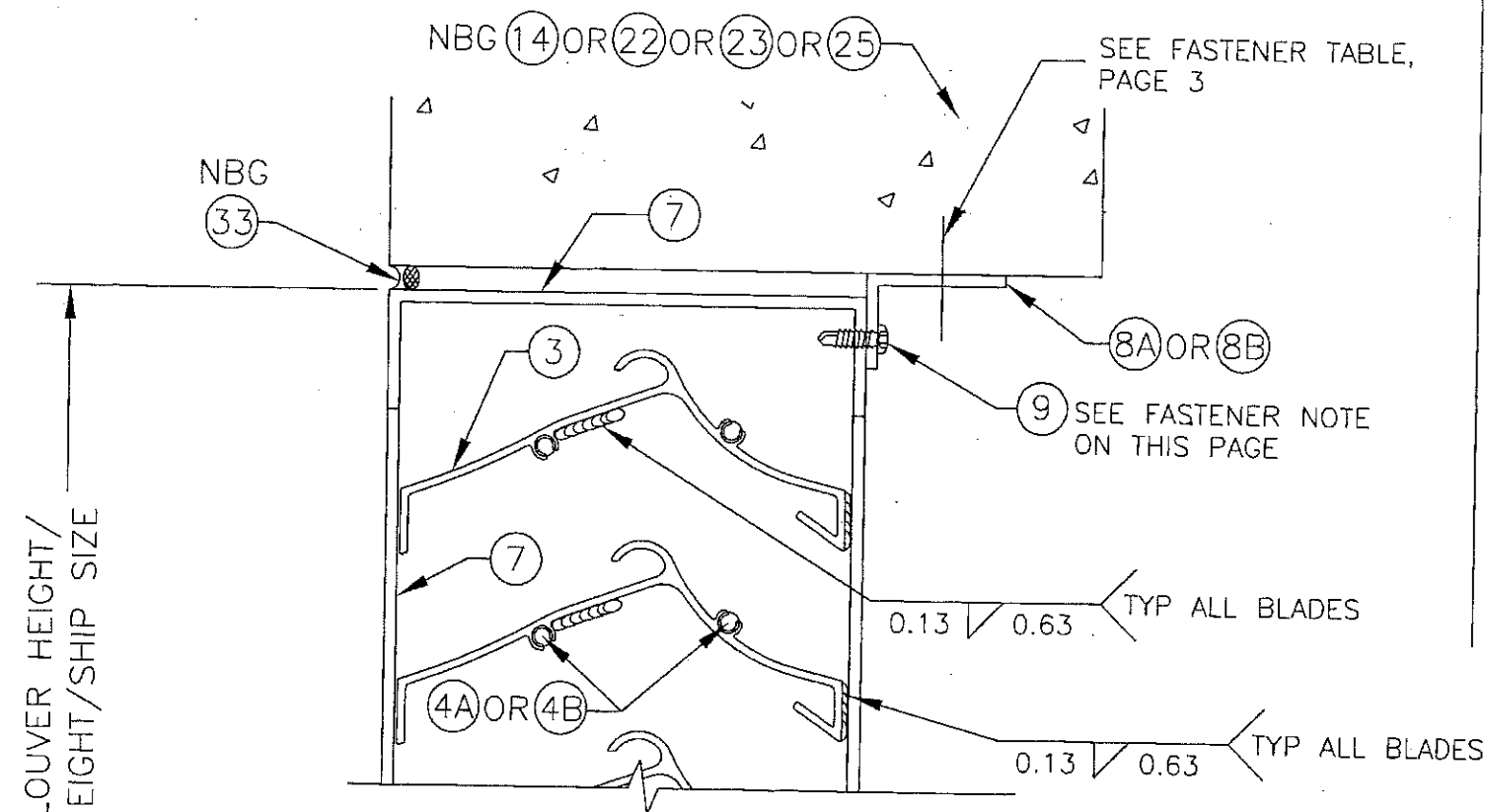
CHANDER P. NANGIA, P.E.
7423 HOLLOW RIDGE DR.
HOUSTON, TX 77095
FLORIDA PE # 21938

DRAWN BY M STEELE	DATE 4/27/09	SCALE 1:2	SHEET NO. 12 OF 16	CAD DRAWING NO. ESS-502D
GREENHECK P.O. BOX 410 SCHOFIELD, WISCONSIN 54476-0410		TITLE ESS-502D LOUVER SHAPE LOUVERS, DETAILS - SPICED JAMBS		
 MAY 12 2009				
Approved as complying with the Florida Building Code Date 08/05/2009 NOA# 12-0512-14 Miami Dade Product Control Division By <i>[Signature]</i>				

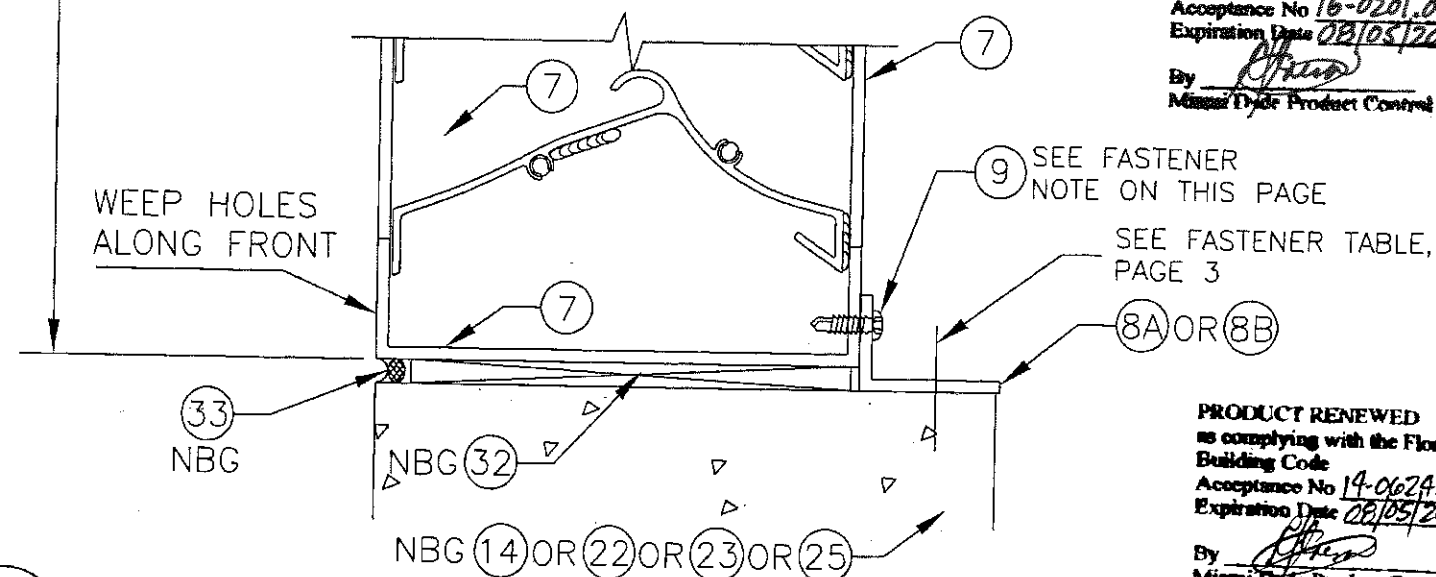
13
13

SHAPES HEAD DETAIL - CHANNEL FRAME
SCALE: 1:2

SETUP FOR OPTIONAL CHANNEL FRAME



FASTENER NOTES FOR (9):
6" MAX \varnothing FOR (1), 4" MAX \varnothing FOR (2) & (3)

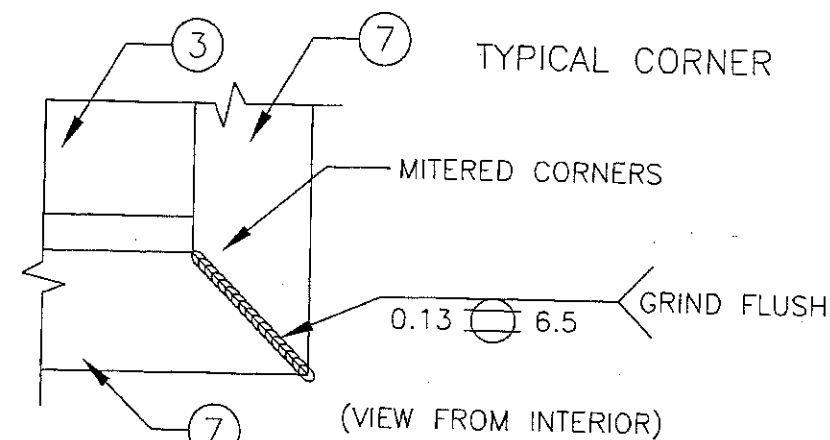
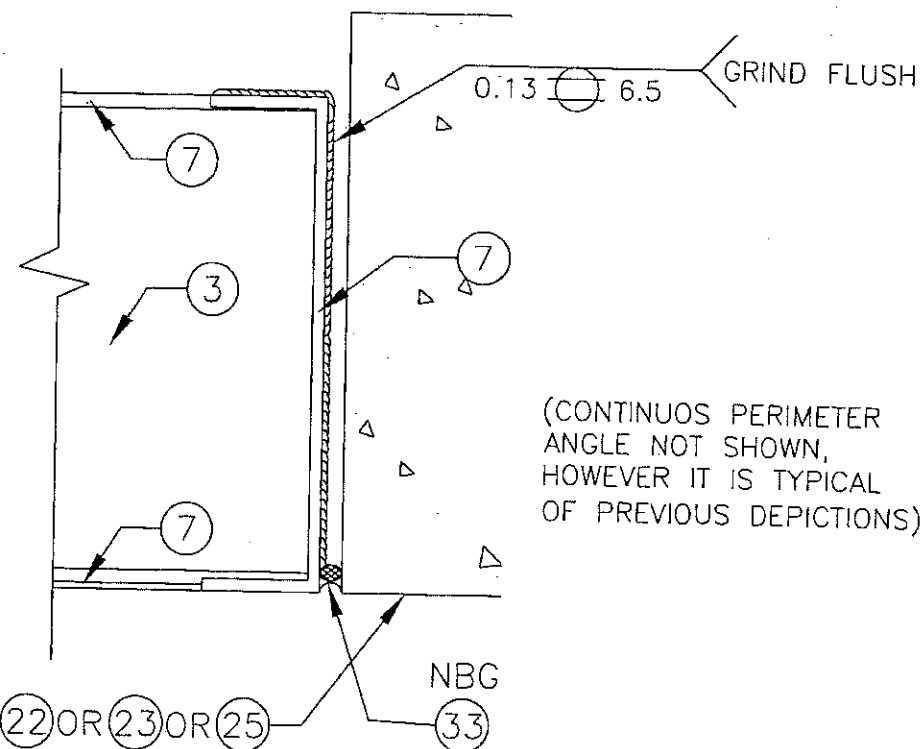


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Acceptance No 14-0624.16
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Miami Dade Product Control

15 A
13

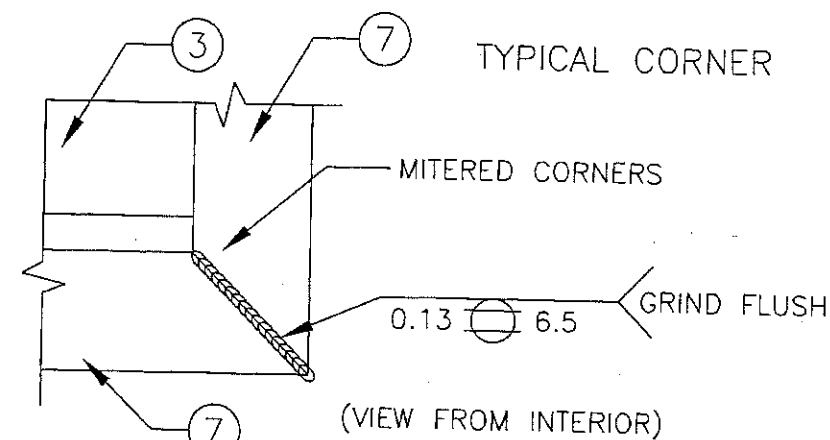
SHAPES CHANNEL JAMB DETAIL
SCALE: 1:2



(CONTINUOUS PERIMETER ANGLE & WALL
CONDITION NOT SHOWN, HOWEVER IT IS
TYPICAL OF PREVIOUS DEPICTIONS)

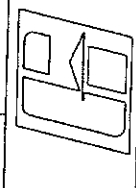
15 B
13

SHAPES SILL DETAIL - CHANNEL JAMB INTERIOR
SCALE: 1:2



CHANDER P. NANGIA, P.E.
7423 HOLLOW RIDGE DR.
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NOA# 24-0519.14
Miami Dade Product Control
Division
By [Signature]



DRAWN BY
M STEELE
SCALE
1:2

DATE
4/27/09

ESS-502D LOUVER

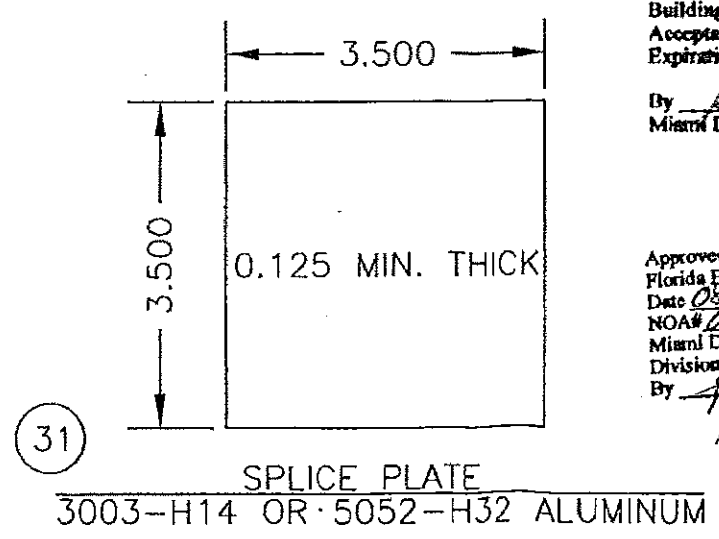
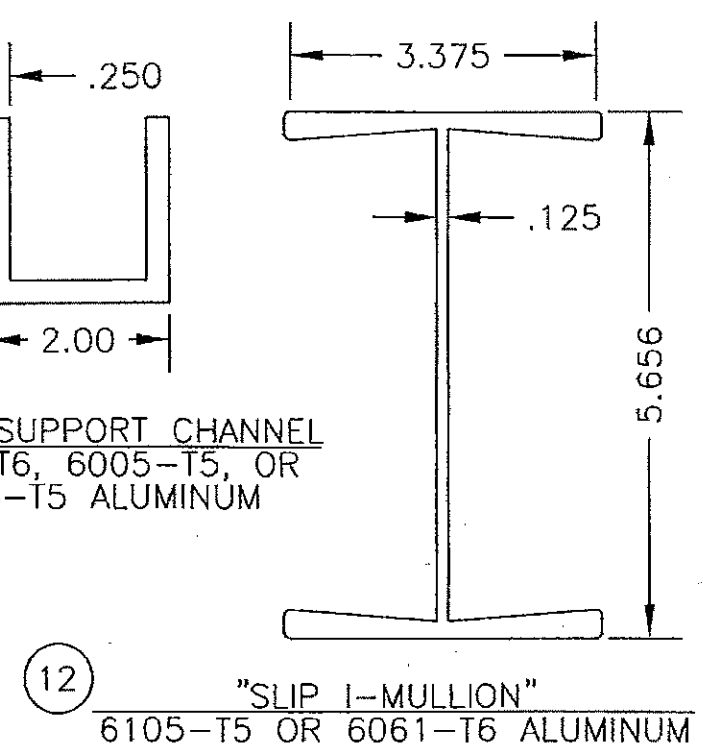
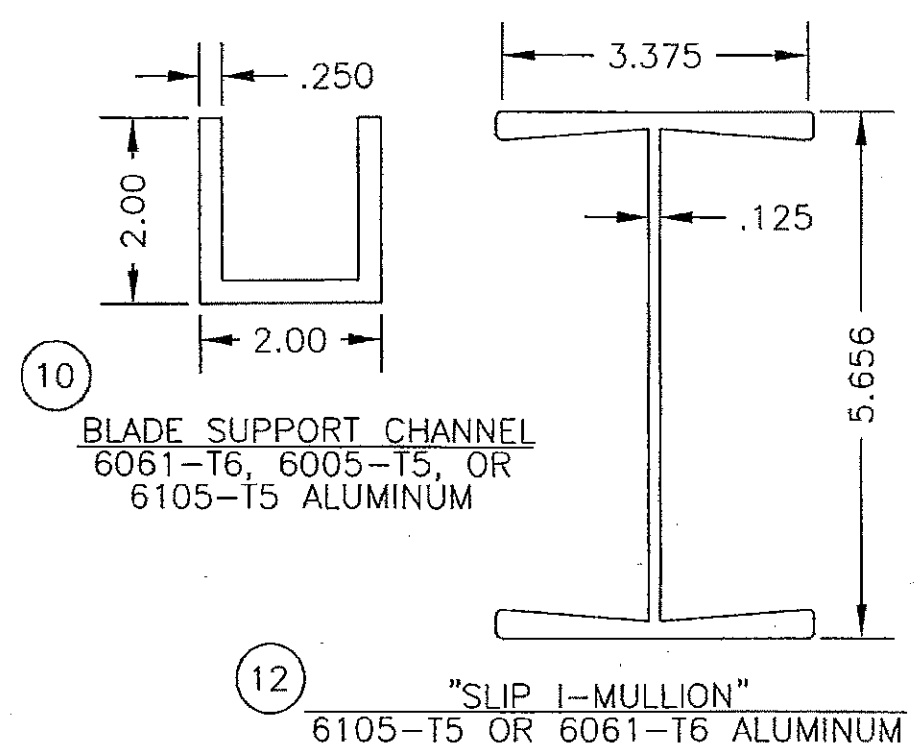
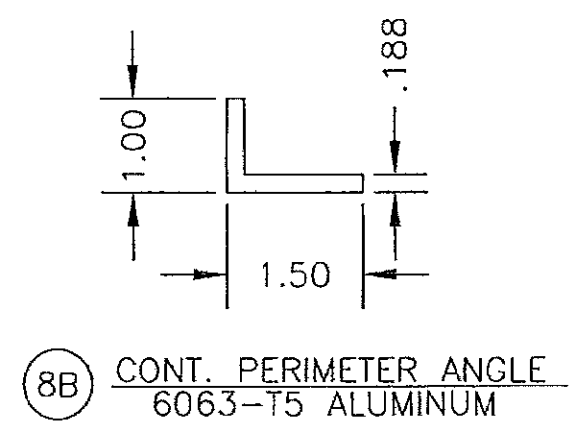
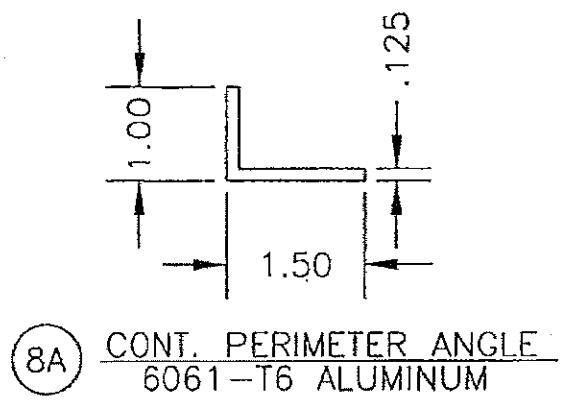
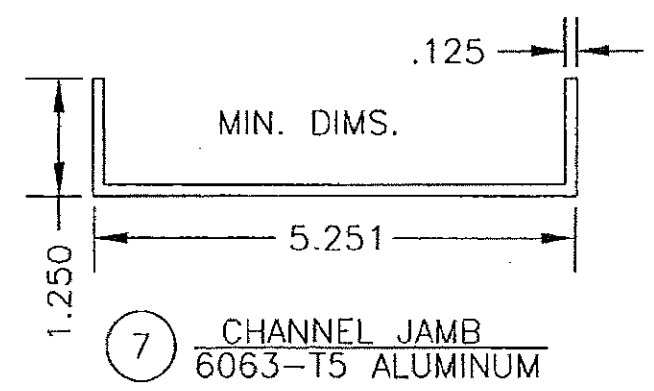
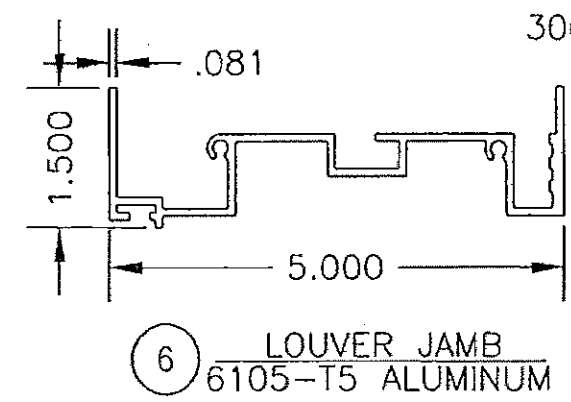
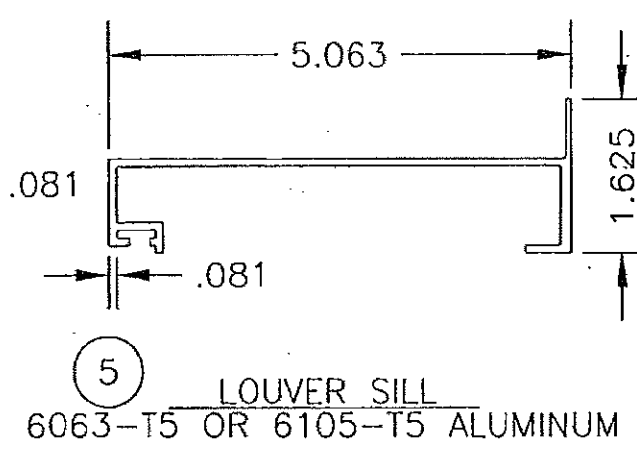
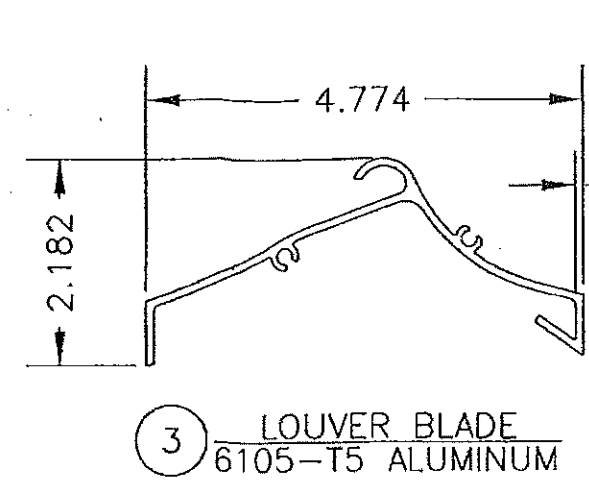
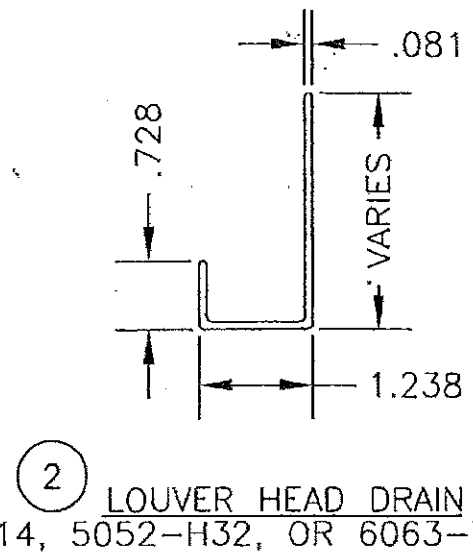
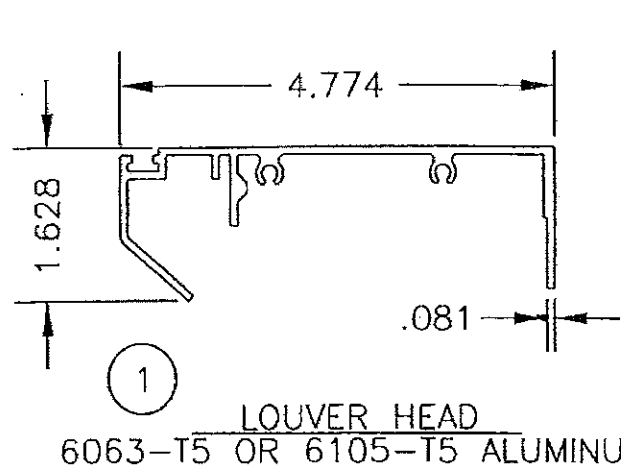
TITLE

SHAPE LOUVERS,
DETAILS - CHANNEL FRAME

CAD DRAWING NO.

ESS-502D

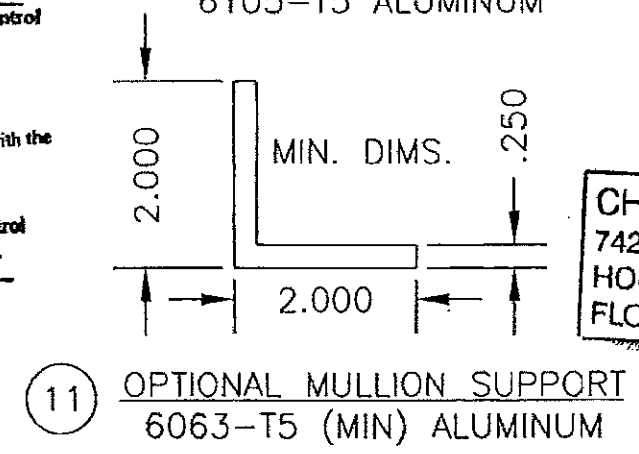
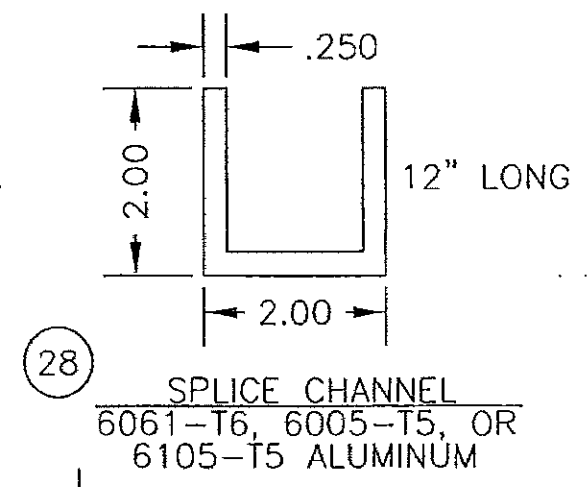
MAY 12 2009



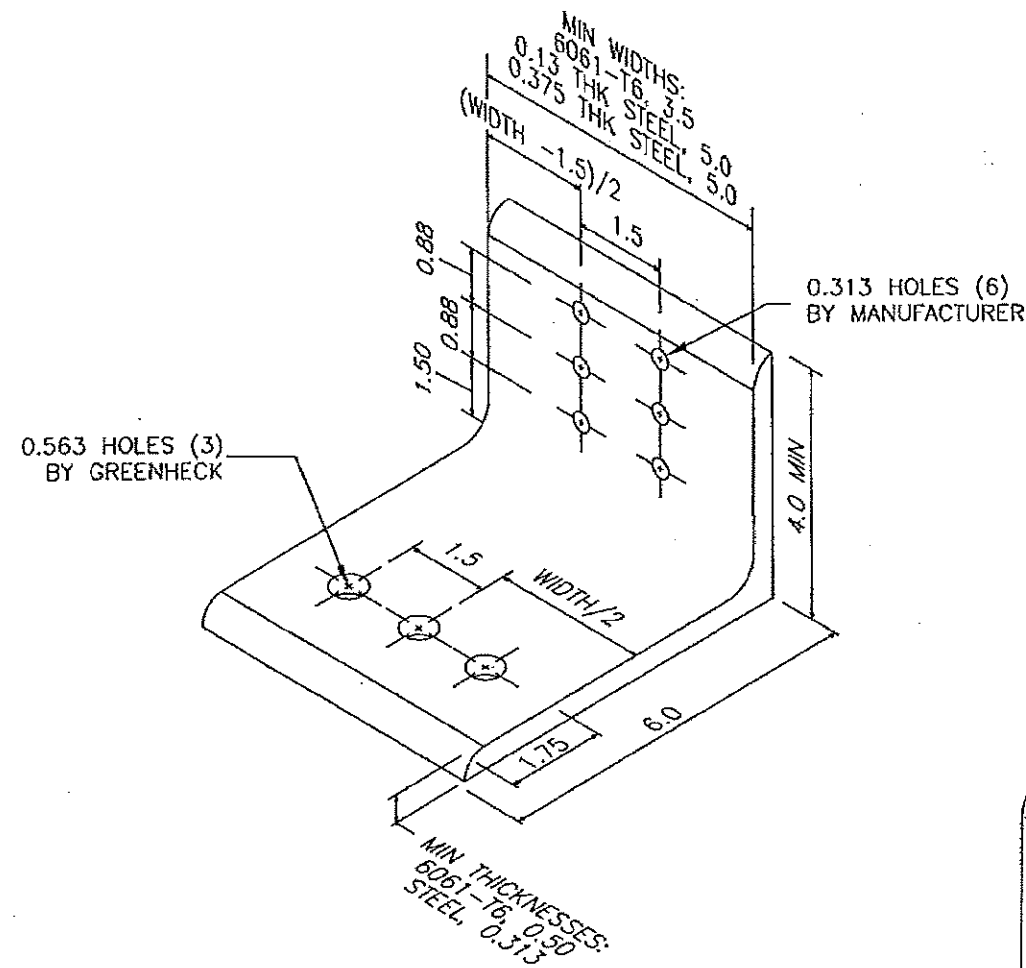
PRODUCT REVISED
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Acceptance No 16-07201-08
Expiration Date 08/05/2019
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Miami Dade Product Control

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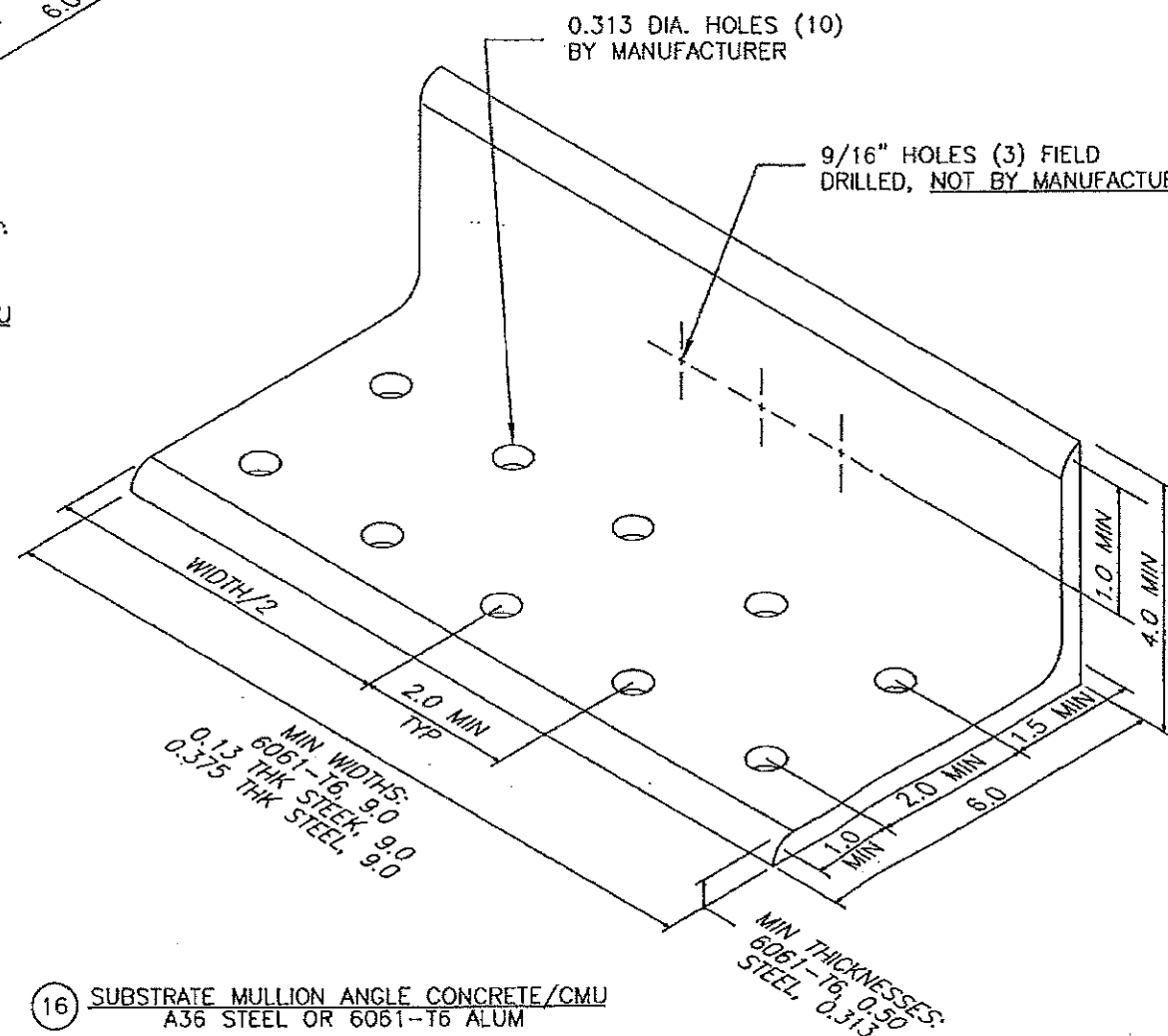
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Florida Building Code
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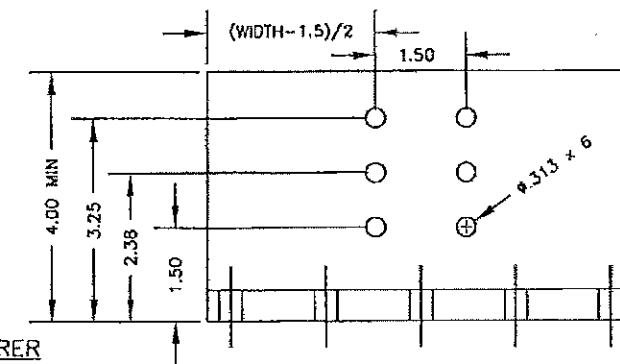
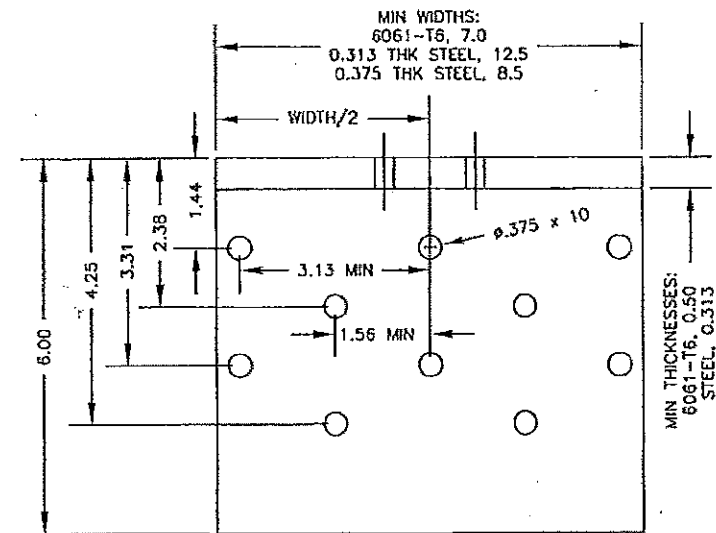
DRAWN BY M STEELE DATE 4/27/09 SCALE 1:2 SHEET NO. 14 OF 16 CAD DRAWING NO. ESS-502D	GREENHECK P.O. BOX 410 SCHOFIELD, WISCONSIN 54476-0410 TITLE ESS-502D LOUVER	DETAILS - PART DETAILS
CHANDER P. NANGIA, P.E. 7423 HOLLOW RIDGE DR. HOUSTON, TX 77095 FLORIDA PE # 21938 MAY 12 2009		



(15) LOUVER MULLION ANGLE CONCRETE/CMU
A36 STEEL OR 6061-T6 ALUM



(16) SUBSTRATE MULLION ANGLE CONCRETE/CMU
A36 STEEL OR 6061-T6 ALUM



(26) MULLION SUPPORT, WOOD
6061-T6 ALUMINUM,
OR A36 STEEL

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Miami Trade Product Control

CHANDER P. NANGIA, P.E.
7423 HOLLOW RIDGE DR.
HOUSTON, TX 77095
FLORIDA PE # 21938

	DRAWN BY M STEELE	DATE 4/27/09
	SCALE 1:2	SHEET NO. 15 OF 16
TITLE ESS-502D LOUVER		
DETAILS - PART DETAILS		
CAD DRAWING NO. ESS-502D		

MAY 12 2009

Approved as complying with the
Florida Building Code
Date 08/05/2009
NOAH 09-0579-14
Miami Trade Product Control
By *[Signature]*

ITEM	DESCRIPTION	MATERIAL	NOTES
1	LOUVER HEAD	ALUM	
2	LOUVER HEAD DRAIN	ALUM	
3	LOUVER BLADE	ALUM	
4A	#10 x 0.5 MIN THREAD, SCREW, 7075-T6 ALUM	ALUM	USED ON ANODIZED UNITS
4B	#10 OR #12 x 0.5 MIN THREAD, SCREW, STAINLESS	SS	TYPICALLY USED
5	LOUVER SILL	ALUM	
6	LOUVER JAMB	ALUM	
7	OPTIONAL C-CHANNEL JAMB	ALUM	OPTIONAL FOR SHAPE UNITS
8A	CONTINUOUS MTG ANGLE, 1.0x1.5x0.125 MIN, 6061-T6	ALUM	
8B	CONTINUOUS MTG ANGLE, 1.0x1.5x0.188 MIN, 6063-T5	ALUM	
9	#10-24 OR #12-24 x 0.5 MIN THREAD, SCREW	SS	
10	BLADE SUPPORT CHANNEL, 2x2x2x0.25	ALUM	
11	OPTIONAL ADDITIONAL MULLION SUPPORT ANGLE	ALUM	OPTIONAL
12	SLIP "I" MULLION	ALUM	
13	GASKET, 3.5x4x0.25 MIN (BY MANUFACTURER)	VARIES	RUBBER/NEOPRENE LIKE
14	CONCRETE OR GROUT FILLED CMU, 2000 PSI MIN	VARIES	NOT BY MANUFACTURER
15	LOUVER MULLION ANGLE FOR CONCRETE/CMU	STEEL/ALUM	
16	SUBSTRATE MULLION ANGLE FOR CONCRETE/CMU	STEEL/ALUM	
17	0.25-20x1 MIN, SCREW (BY MANUFACTURER)	SS	
18	BOLT, 0.5-13x1 MIN (BY MANUFACTURER)	SS	
19	NUT, 0.5-13 MIN (BY MANUFACTURER)	SS	
20	WASHER, 0.5 MIN (BY MANUFACTURER)	SS	
21	0.25 DIA. ITW BUILDEX TAPCON w/ ADV. THREADFORM, 1.75 MIN EMBEDMENT	SS/STEEL	NOT BY MANUFACTURER
22	STRUCTURAL STEEL, 0.075 MIN THICKNESS	SS/STEEL	NOT BY MANUFACTURER
23	STEEL STUD, 14GA MIN	SS/STEEL	NOT BY MANUFACTURER
24	0.25 DIAMETER SCREW, MUST FULLY ENGAGE STEEL	SS/STEEL	NOT BY MANUFACTURER
25	WOOD SUBSTRATE, G=0.55 MIN DENSITY	WOOD	NOT BY MANUFACTURER
26	MULLION ANGLE FOR WOOD	STEEL/ALUM	
27	0.375 DIA. LAG SCREW, 3.0 MIN EMBEDMENT	SS/STEEL	NOT BY MANUFACTURER
28	SPLICE CHANNEL, 2x2x2x0.25, 12" LONG	ALUM	
29	BOLT, 0.313x2.5 MIN (BY MANUFACTURER)	SS	
30	NUT, 0.313x5x16 (BY MANUFACTURER)	SS	
31	SPLICE PLATE	ALUM	
32	SHIMS, OPTIONAL, AS REQUIRED, INCOMPRESSABLE	VARIES	NOT BY MANUFACTURER
33	SEALANT AND BACKER ROD	VARIES	NOT BY MANUFACTURER

GENERAL NOTES:

1. IT SHALL BE THE RESPONSIBILITY OF THE PERMIT HOLDER TO VERIFY THE STRUCTURAL INTEGRITY OF THE EXISTING STRUCTURE TO SUPPORT THE LOADS IMPOSED BY THE PENTHOUSE ASSEMBLY.

2. THE ESS-502D HAS BEEN DESIGNED AND QUALIFIED IN ACCORDANCE WITH THE FLORIDA BUILDING CODE (FBC) AND TEST PROTOCOLS TAS-201 (IMPACT), TAS-202 (UNIFORM STATIC PRESSURE), AND TAS-203 (CYCLIC FATIGUE) TO A MAXIMUM DESIGN LOAD OF +/- 110 PSF.

3. THE MAXIMUM UNSUPPORTED BLADE LENGTH SHALL NOT EXCEED 72" WITHOUT STIFFENER AND 144" WITH STIFFENER.

4. THE MAXIMUM OVERALL UNIT HEIGHT IS UNLIMITED BY MEANS OF STACKING AND USE OF SPLICED BLADE SUPPORTS. THE MAXIMUM OVERALL UNIT WIDTH IS UNLIMITED BY USE OF MULLIONS WITH A MAXIMUM SPACING OF 72".

5. LOUVER CONSTRUCTION: HEAD, SILL, JAMBS, AND BLADES ARE SQUARE CUT AT BOTH ENDS. BLADE SPACING IS 2" MAX. EACH JAMB IS SECURED TO THE SILL WITH (2) SCREWS AND WELDED. BLADES AND HEADS ARE SECURED TO JAMBS WITH (2) SCREWS AND WELDED.

6. ALL WOOD SUBSTRATE SHALL BE G = 0.55 DENSITY OR BETTER.

7. ALL STEEL STUD SUBSTRATE SHALL BE MIN. 14 GA. FY = 50 KSI.

8. ALL STRUCTURAL STEEL SUBSTRATE SHALL BE MIN. 0.075" THICK FY = 36 KSI.


9. ALL CONCRETE SUBSTRATE SHALL BE MIN. 2000 PSI.


10. CONCRETE MASONRY SHALL BE ASTM C90, TYPE II, MIN. 2000 PSI GROUT-FILLED.

11. THE LOUVER MANUFACTURER DOES NOT DETERMINE THE STRUCTURAL INTEGRITY OF THE SUBSTRATE STRUCTURE.


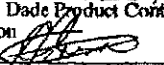
12. THE SYSTEM SHALL ONLY BE INSTALLED IN A LOCATION WHERE THE ENCLOSED AREA/ROOM BEHIND THE LOUVER IS DESIGNED TO DRAIN WATER PENETRATING INTO THE AREA/ROOM, AND THE AREA/ROOM WILL HOUSE WATER RESISTANT/PROOF EQUIPMENT, COMPONENTS, AND/OR SUPPLIES.

13. INSTALLER TO PROVIDE SEPARATION OF DISSIMILAR MATERIALS AS REQUIRED.

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as complying with the Florida
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By 
Miami Dade Product Control

CHANDER P. NANGIA, P.E.
7423 HOLLOW RIDGE DR.
HOUSTON, TX 77095
FLORIDA PE # 21938

DRAWN BY M STEELE	DATE 4/27/09	SCALE NA	SHEET NO. 16 OF 16	CAD DRAWING NO. ESS-502D
GREENHECK P.O. BOX 410 SCHOFIELD, WISCONSIN 54476-0410		TITLE ESS-502D LOUVER		
ITEMIZED PART LISTING & GENERAL NOTES				
 MAY 12 2009				
Approved as complying with the Florida Building Code Date 08/05/2009 NOA# 09-0519-14 Miami Dade Product Control Division  By				